





## Wages experiment angers campus unions

by David Jobbins

University unions are to tackle head-on what they regard as a severe threat to nationally negotiated salaries and conditions of service posed by Government plans for new sources of funding for a limited number of universities.

An early meeting of the national universities joint union committee comprising all the academic and non-teaching unions is to consider the implications of Sir Keith Joseph's pre-election proposal for an experiment in university funding for wages and conditions.

They have waited until after the election before bringing the issue to the fore. But Ms Rita Donaghy, chair of the committee and chairperson of Nalco's national universities committee warned delegates to the union's conference in the Isle of Man that such steps could affect staff not only at the universities directly involved in the experiment but elsewhere.

"We say this is going back to the bad old days in the universities when people were even lower paid than they

	Offer to clerical staff from July 1	July 1982	July 1983	Percentage increase
Grade 1	2,957-4,207	3,094-4,401		4.8
Grade 2	4,094-5,015	4,280-5,289		4.8-5.5
Grade 3	4,848-5,883	5,111-6,160		5.5-6.1
Grade 4	5,863-6,847	6,160-7,162		5.1-6.8
Grade 5	7,046-8,330	7,371-8,714		4.6

	Offer to manual workers from April 1	£ per week	£ per week	percentage increase
Grade A	64.5	67.80		5.1
Grade B	67.4	68.89		5.0
Grade C	67.4	70.7		4.9
Grade D	70.89	74.19		4.6
Grade E	73.59	76.89		4.5
Grade F	77.19	80.49		4.3
Grade G	80.21	83.51		4.1

are today. It would be more difficult to negotiate for 44 institutions than to have a national understanding, especially when the money is still being allocated at national level."

Ms Donaghy said the issue would be top of the agenda at the joint committee's next meeting. "The vice chancellors can get away with these cosy little

chats with Sir Keith because the university system is so deeply undemocratic," she added.

Both clerical and manual workers are considering "final offers" from the university employers worth over 5 per cent to some employees.

The offer to white collar staff is heavily weighted towards staff on

grades two and three - with up to 5.5 per cent for people earning about £5,000. But there is nothing on offer on conditions of service or restructuring and union leaders are recommending "reluctant" acceptance despite a warning from the employers that every 1 per cent over the cash limit of 3.5 per cent will cost 100 jobs. The overall increase is about 5 per cent.

Manual workers are considering a flat rate £3.30 a week without a recommendation from their national committee. The offer is worth about 5 per cent for the lowest two grades. Shift allowances are also to increase, after lengthy negotiations led to an improvement on the employers' first offer of £3.

A provisional agreement was also reached on regrading certain craft workers in an uncashed deal from April 1 this year reached belatedly following the 1982 settlement. Grading changes are most likely in catering, gardening areas and with porters undertaking driving on the campus as part of their other duties.

## Provide more for adults, says BTEC

by Felicity Jones

The Business and Technician Education Council is encouraging colleges to steer clear of traditional nine-month courses in favour of shorter courses for adults.

In a policy statement on continuing education, the council says that it wishes to develop and validate a range of vocational courses and units for adults which meet the needs of industry and business build on individuals' existing skills and develop students' job potential.

It emphasises the flexibility and length of courses it would like to see the colleges proposing. It encourages the development of single self-contained units.

These units would consist of at least 60 hours of instruction and 30 half-units be the minimum length normally accepted for validation. These units could be linked to others but each would be expected to stand alone.

The council thinks that in many cases individual units will provide the most appropriate way for adults to update specialist knowledge or meet the requirements of professional bodies. Combinations of units would provide "tailor-made" packages for students.

Adult learners may be deterred from studying because of difficulty in getting the time off work, fixed course attendance that does not fit in with employment or personal circumstances and the limited availability of particular courses in a particular area.

In order to counteract these deterrents to study, the BTEC wants courses to use any pattern of attendance or of open or distance learning. It does not rule out that combinations of various types may be the most effective way of meeting people's needs.

In trying to expand the provision of flexible courses, the BTEC also states that the entry criteria to such courses would need to be flexible to meet the needs of those people who want post-experience training but may not have formal qualifications.

## Computer installed at university

University researchers throughout the country now have access to a Cray 15 "supercomputer" for the first time.

The machine, one of a handful in Britain, is housed in an extension to the University of London's computer centre, which was formally opened on Tuesday by Princess Anne, chancellor of the university. The Cray 15 is the centrepiece of the unit's plans to develop a national service for university computer users.

Dr Richard Field, director of the centre, said that time on the new machine was already nearly all allocated throughout the next year. The Cray 15, which was previously leased from its American manufacturers by the Science and Engineering Research Council for its Daresbury Laboratory, had been bought for the London centre because demand for higher computing power was increasing all the time.

The new machine would be used by meteorologists, engineers, quantum chemists and crystallographers for complex calculations they could not do any other way, he said.

The extension to the centre also houses an Amdahl 470 computer which is mainly used by social science and arts researchers who do not need the processing power of the Cray. Both machines will be available throughout the UK through a new data network. Dr Field said the outlines of the network would be complete in about a year, although both London and the other major university computer centres in Manchester already had extensive links with other universities.

Shortly after inaugurating the computer centre, Princess Anne opened an extension to the chest unit at King's College Hospital Medical School, the new building, paid for by a grant from the Wellcome Foundation, houses research laboratories for work on lung diseases and breathing disorders.



A shot from the film *Madame Potable* by Emma Clader, which has been on display in London as part of the annual Royal College of Art degree show for the past week.

## Leicester group forced to turn down £50,000 grant

Researchers at Leicester Polytechnic have turned down a £50,000 grant from the Council for National Academic Awards to extend a major study of engineering education because no other funding body will support it.

The Engineering Council, Science and Engineering Research Council and Department of Education and Science all turned down requests for money for the first phase two of the project. The first project report earlier this year was commended by Sir Monty Finniston, chairman of the Committee of Inquiry into the Engineering Profession.

The first part of the goals of engineering education project, founded by the CNA and the DES, found that undergraduate engineers were ill-equipped to work alongside other professions in industry. They were bad at communicating, lacked confidence in policy debates and had little understanding of business practices.

The CNA agreed to fund an extension of the project "to elucidate ways and means of promoting change in engineering education", according to Rita Austin of the council's development services division.

The DES declined to back this additional research early on, declaring that it was neither relevant nor timely. The Leicester researchers, led by Geoff Beuret, then tried to raise £50,000 to match the CNA's offer by

asking for £12,500 instalments from potential backers in the public and private sectors. But negative verdicts from the Engineering Council, who said they wished to concentrate on their own research, and the SERC, dissuaded industrial firms from contributing as well.

The Leicester team is now being disbanded, and Mr Beuret has written to the CNA saying that the original £50,000 grant will not be needed. The council had offered to hold the money until the end of the summer, but Beuret believes that the chance of getting universities as well as polytechnics to cooperate with the study has now been lost.

This week he was resigned to returning to his teaching duties. "If the nation is determined not to try and solve its problems, neither our project or anyone else's can make any headway," he said.

Mr Brian Overly, secretary to the CNA and chairman of the Leicester project's steering group during the first phase, said he was disappointed the work would not be extended. "It was a very promising and valuable project," he said. However, the CNA would still develop its research programme in other areas where evaluation of effectiveness of existing curricula was needed.

## Stirling delays tenure meeting

A meeting of Stirling University's joint negotiating and consultative committee to discuss proposals abolishing tenure for all new posts has been adjourned until the end of the month.

It is understood there have also been informal talks between the university and the Advisory, Conciliation and Arbitration Service which was asked

by Stirling's Association of University Teachers to conciliate in a dispute between the association and the university over three "new blood" posts being offered without tenure.

The dispute is also being discussed informally by the university and the AUT, which is advising applicants to seek advice from the association.



Mr Heath: outside candidate

## Search for Dahrendorf's successor

Canvassing is now in full swing to fill one of the most prestigious posts in higher education - the directorship of the London School of Economics and Political Science.

All 12 members of the special selection committee, headed by Sir Huw Wheldon, chairman of the school's court of governors, have been asking to come up with desirable and possible candidates and suggestions from LSE members and associates are being studied.

The long list has so far thrown up two eminent sociologists, one well known European administrator, a chairman of the Social Science Research Council, and a former Prime Minister.

Dr Edmund Leese, former head of the social science division of the Centre National de la Recherche Scientifique, the official French research centre in Paris, is considered to have good administrative and European credentials. Professor Ronald Dore, who is 58 and currently assistant director of the Technical Change Centre, is a highly regarded sociologist who has strong connections with the LSE where he was professor of sociology.

Another eminent sociologist, Mr Gary Runciman, has also been mentioned, although it could prove hard to tempt him to a full time academic post from the family shipping business he

runs. He has a fellowship at Nuffield College, Oxford, and is known to want to devote all spare time and energy to writing.

Mr Edward Heath, the former Prime Minister, has also been put on a list. But a spokesman for Mr Heath said the former Conservative leader had every intention of continuing with his Parliamentary work.

Another possible candidate who has been approached is Mr Michael Posner, due to leave his post as SSRC chairman sometime in the autumn. However there may be doubts about his international academic standing.



Mr Posner: leaving SSRC

## 'Scarce' subjects gain bigger lobby

by Paul Flather

Pressure is increasing on the Department of Education and Science to set up a special committee to monitor and protect highly specialized "scarce" subjects in universities which do not attract many students but have important academic, diplomatic, security or trade value.

The first test for such a committee is already looming in the field of Iranian studies at Cambridge University where dons will vote in October on proposals to "suppress" eight and a half lectureships in the faculty of oriental studies.

Officials from the DES have been holding talks since the end of last year with other interested officials from the Foreign and Commonwealth Office and the Department of Trade and Industry, but no decisions have been made.

One setback for the proposed committee is the shifting of Mr William Waldegrave, former under-secretary for higher education, out of the DES. He was known to be keen on a committee looking at the plight of subjects like Asian, African, Slavonic, and Oriental studies.

The British Academy has become increasingly concerned about the future of such subjects and has made its views plain to the University Grants Committee, which would be centrally involved in any such committee. The academy is also watching developments at Cambridge.

A joint working party set up jointly in 1981 with representatives from Oxford University has recommended the abolition of eight lectureships at Cambridge and the replacement of the chair in Sanskrit with an ordinary lectureship. Persian and Turkish are to be concentrated in Oxford and the post in Iranian studies will disappear.

In a discussion in the Cambridge senate last month the report was heavily criticized for being "painful", an "unprecedented onslaught on oriental studies", harmful to the study of the ancient Iranian empire and related subjects such as Greek, Roman, and Indian studies, and even "satanic".

Cambridge is the only university to offer separate courses in Iranian studies at undergraduate level. The School of Oriental and African Studies in London offers it at postgraduate level and Persian is offered at Durham, Edinburgh, Oxford, London and Cambridge.

The university's general board argues that 36 posts in the faculty, given the number of students, is impossible to justify in the current economic climate. The critics argue that size and numbers do not matter when whole subjects are threatened.

Public sector white collar workers are to oppose "privatization" of the educational element of the Youth Training Scheme.

Leaders of the National and Local Government Officers Association are to consider ways of resisting and reversing the trend away from further education colleges towards the private sector which they believe is being directly encouraged by the Manpower Services Commission.

The union, with members in the polytechnics and colleges as well as local government, is disturbed at the growth of private companies who hope to profit from the YTS by undercutting the colleges.

Delegates at the union's annual conference on the Isle of Man this week voted overwhelmingly against the wishes of their leaders to boycott YTS schemes if trainees did not receive the rate for the job.

Mr Ralph Gayton, chairperson of the education committee warned that to boycott YTS schemes would remove the chance to set standards. "If we set them high enough we can drive the cowboys out. If we boycott the scheme the cowboys will come in," he said.

According to the union, companies believe they can make a profit of £300 a head on YTS trainees. One firm, the Link Organization from Birkenhead, has been set up from scratch to operate 18,000 YTS places on a £30m budget.

The conference also called for regeneration of the economy through increased public spending, particularly on capital projects. It approved an alternative economic strategy which includes a massive expansion of education and training to bring Britain into line with other industrialized countries, and longer full-time and continuing education to reduce the work content of each job.

## Lecturers to withhold exam results

by David Jobbins

Lecturers at Brighton Polytechnic have voted to withhold students' examination results in an attempt to force the withdrawal of compulsory redundancy notices.

Their decisions, on the eve of the examination period, began on Tuesday despite an eleven-hour warning from Mr Geoffrey Hall, the polytechnic director.

"Any restriction on the completion of the examination boards programme will lead to a delay in the publication of results affecting the progression of students, the release of local authority maintenance payments for the autumn term and in the present difficult times will inevitably affect the job prospects of our graduates and diplomates," he said.

He warned that any interruption of the examination procedures would be "neglect" of contractual and professional responsibilities.

Although six redundancy notices were issued two weeks ago, two have already been revoked and Mr Hall said discussions were continuing on possibilities of redeployment for three of the remainder. Good progress was also being made on secondment arrangements for a year's training for the sixth, he said, with the prospect of redeployment in 1984/85.

In a ballot three of the polytechnic's four branches have voted overwhelmingly for the action. Results of the fourth branch at Eastbourne are awaited.

Mr Bob Burn, chairman of the National Association of Teachers in Further and Higher Education's coordinating committee at the polytechnic said that 67 per cent of the total membership of the three branches had voted in favour. As well as refusing to forward marks, members of the National have been instructed not to take part in vital examination boards.

The local Association of University Teachers is backing the action by operating the same sanctions on university-validated courses at the polytechnic. The students' union is also supporting the lecturers' action.

A Nafte official commented: "It is not our intention seriously to disadvantage students, where it is felt this will happen the coordinating committee has been given authorization to vary the instructions."

Officials stress the fight is not only with the polytechnic but with East Sussex County Council, which meets today. The authority has never ratified the national agreement on one year's notice and has given only six months' notice to the polytechnic staff involved.

One way out may be to invoke a local disputes procedure which has reference to the joint secretaries of the National Joint Council on Conditions of Service as its final stage.

## Row builds up over future of architectural education

by Felicity Jones

A row is likely to erupt at an important consultative conference on the future of architectural education this autumn because participants feel it is being held too late.

Several prominent architects believe that by the time the conference is held by the Royal Institute of British Architects at the end of November, the Joint National Advisory Body and University Grants Committee will already have made crucial decisions about resources and student numbers.

A conference held recently in Leicester on "informing the schools of architecture" ended in acrimony when it was thought that the RIBA had already conceded that the number of entrants to architectural schools should be restricted.

A summary of a "green paper" on strategy which Professor John Tarn of Liverpool University will present in full at the November conference aroused an angry response when he said that pruning was necessary and the RIBA ought to cooperate fully.

Other participants thought that since unemployment was not such a serious problem as in other professions, there

was no automatic reasons for reducing student numbers. In some circles it is thought that the pressure to reduce intake comes from older members of the profession who are being pushed out by the younger architects.

At Leicester, Professor Thomas Markus of Strathclyde University said that members had originally thought that the November conference was being held to devise a strategy for the future. But it had become clear that a strategy would be already be partly devised by then.

Professor Markus, a former vice-chairman of the RIBA education committee, said a smokescreen had been erected to give the impression of consultation but by November the NAB decisions on polytechnic and colleges would be advanced.

"It is putting the cart before the horse to propose to develop a long-term strategy when some key short-term cuts will have already been made," he said.

Mr Peter Gibbs-Kennett, the director of education at the RIBA said people were getting paranoid about the NAB exercise. He said it was a "mistaken impression" to think that key decisions would have been made before the autumn strategy conference.

## Graduate teacher warning

If the employment market improves markedly not enough graduates will go into teacher training to meet demand in the 1990s, the Government has warned this week.

And if there is a smaller improvement, graduates in maths, science and vocational subjects will move into other areas, leaving arts, social studies and humanities graduates to enter teaching if they are allowed to, the Association of Graduate Careers Advisory Services says.

The warning comes in a note to the Advisory Committee for the Supply and Education of Teachers, which is considering Department of Education and Science projections on anticipated demand. This shows that by 1990 teacher training will need a 16 per cent share of a diminishing number of qualified leavers anticipated to be below 120,000. In 1995 the proportion will rise to 20 per cent out of a projected 100,000 leavers.

Among the fundamental reasons given by the association for such a forecast are the likely increasing demand for graduates in most jobs lead-

ing to fiercer competition for the decreasing number available. It also points out that in the past graduates have opted for secondary teaching, yet most of the future vacancies will be in primary schools.

"But above all if the 'relevant degree' criteria is applied vigorously a significant proportion of the graduating force, whatever their interests and abilities in teaching, will not be accepted on to Postgraduate Certificate of Education courses," the association says.

It recommends that if more are to be encouraged into the profession, then the subjects of relevance" requirement should either be removed or there should be one-year courses for graduates of certain subject combinations and two-year courses for others.

The Government's pilot national scholarship scheme designed to attract more high quality maths and physics graduates into teaching has so far failed, according to a Leicester University report. It recommends lowering entry requirements to include graduates with lower second degrees.

## Favourite poly in Britain

continued from front page

polytechnics in these subjects to be Ulster and North London. Students desperate for a place at any price should try polytechnic science and technology at North London or ceramic technology at North Staffordshire, since in both these courses places outnumbered the applicants.

But the figures should be treated with caution: they clearly disadvantage polytechnics which have few vocational courses or those whose departments did not always send in the numbers of applicants and places; courses run by fewer than five polytechnics have been omitted, but unusual courses will still tend to push their institutions to the extremes of popularity or unpopularity because there are fewer with which to compare them.

The book also includes the male/female ratio on each course; the percentage of non-A level candidates accepted; selection criteria; the policies on interview and the exam success, drop-out rates and final destination of each department's students.

*Survey of Polytechnic Courses in England, Wales and Northern Ireland* by Eric Whittington, published by Careers Consultants Ltd.

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## News in brief

## Marsland leads economic forum

An attempt by the vice-chancellor of Birmingham University, Professor Edward Marsland to set up a broadly based forum to tackle the economic problems of the West Midlands is being backed by industry, trade unions and local authorities.

After a meeting this week of representatives from the regional Confederation of British Industry, Trades Union Congress, local authorities and university representatives a steering committee has been set up with Professor Marsland in the chair.

## Turkish assurance

The British Council has assured the Association of University Teachers that it is not helping the Turkish government to recruit British academics. A letter to Ms Diana Warwick, the union's general secretary, recalls a Commons statement by a Foreign Office minister in March rejecting suggestions that the British Council had been assisting the Turkish government.

## Degrees of equality

Controversial Scottish educationalist, Mr R. F. Mackenzie has refused an honorary degree from the Open University because of its non-egalitarian honorary degree structure.

Mr Mackenzie had initially accepted the honorary MA, but then discovered the OU differentiated between those who received doctorates and those who received MA degrees.

In a letter to the OU, Mr Mackenzie explained that since he had spent most of his life fighting for parity of esteem among his pupils, he could not accept distinctions akin to officers and "other ranks" in the army, and academic and non-academic pupils in schools.

## Biotech company

Edinburgh and Heriot-Watt universities this week launch their new biotechnology company, *Biotech*, which will offer research and consultancy services. It is backed by the Scottish Development Agency, Lothian Regional Council and the Bank of Scotland.

## Business as usual

The City University Business School will remain a constituent part of the university, but discussions will now take place about possible new forms of relationship between the two. This was the result of a discussion at the City senate last week. The business school had produced a discussion document listing eight different options for its future, the favourite being the school receiving its grant direct from the University Grants Committee.

## Visitors welcome

Glasgow University is to establish an annual visiting fellowship in Scottish literature from October next year. Financially supported by the *Glasgow Herald* it is intended to attract applications from scholars working outside Scotland.

## Polys threaten NAB boycott

by Karen Gold

Two polytechnics may pull out of all committees of the Council for National Academic Awards and the National Advisory Body if the proposed NAB reduction in the unit of resource goes ahead.

Both moves hinge on the polytechnics' academic boards which say academic standards will fall as a result of the NAB proposal to cut the funding per student in higher education by about £500.

Middlesex Polytechnic's resources committee has passed a resolution without opposition which is to go to the academic board at the end of this month. It asks that the "academic board be advised to recommend members of the polytechnic to withdraw from any committees of the NAB and the CNA, of which they are members, so long as such action is paralleled by similar steps taken by a substantial

number of other institutions." The withdrawal would be "until assurances are received that the preservation of academic standards in public sector higher education is given a high priority by the CNA and NAB when future resourcing is under consideration."

In a second motion, the resources committee also called on Middlesex's governors and local education authority representatives to urge the Secretary of State for Education and the NAB committee to reject the proposed unit cost reduction and seek funding that would guarantee academic standards.

Mr Richard Lewis, the committee chairman and polytechnic assistant director, said that the polytechnic had got to the lowest possible staff: student ratio with the existing level of support. Further cuts would turn polytechnics into childminders.

The resolution was not an attack on

the CNA, nor did it come from the polytechnic hierarchy, he said. "It was seen as a feeling that at some stage action needs to be taken by individuals to express their disquiet at the way developments could go."

North-East London Polytechnic's academic board has passed a resolution with similar intentions, according to Mr Gerry Fowler the director. He said it supported "any action that was necessary in order to demonstrate the absurdity and unacceptability of the proposed sharp reduction of the unit of resource."

The meeting had given Mr Fowler power to act if the NAB decisions became known quickly—for example if the NAB ordered a sharp increase in student numbers together with a cut in funding—so that the NELP would move along the same lines as Middlesex with the ultimate sanction being withdrawal from the NAB and the CNA, he said.

## Unit urges support for scheme

by Patricia Santinelli

Further education colleges will fail many young people if they do not participate in the Youth Training Scheme, a Further Education Unit report warned this week.

"Although it is regrettable that colleges will have to fight for a place in the YTS, not to get involved will only result in the neglect of a great many youngsters," says the report *Supporting YTS*.

The report aims to give colleges guidance on how to implement the YTS. It was prepared by a group of experts chaired by Mr Jim Debo of the Confederation of British Industry. Its membership was drawn from education, local authorities, the Business Education Council, teaching unions, the Manpower Services Commission and industry.

It is intended to be used as a manual and contains separate sections relating to each of the eight design elements necessary to the scheme. Each section states or refers to the MSC criteria and then gives so describes how these relate to further education and other education perspectives.

The FEU says it is anxious to encourage participation from colleges because it sees the possibility of new training and educational opportunities for many young people. This is in spite of recognizing the uncertainties which exist both in the curriculum designed for the scheme and the intentions of managing agents.

In particular, the report is concerned about progression from the training scheme into a job or further education and training. This is an unresolved issue. It stresses that from the outset the best approach to the YTS is one which envisages eventual integration of all three of the National Training Initiative objectives—the YTS, skills training and adult training and re-training.

It is also that if the response of further education is to maintain its traditional ways of working and not adjust to changes, then the result is likely to be disastrous for colleges.

The report does not deny that the YTS presents problems or organizational change, the need for different teaching methods and possibly a reallocation of resources which have to be resolved between local authorities and colleges.

*Supporting YTS—Guidance for colleges and others involved in the MSC Youth Training Scheme*, from the Further Education Unit, Elizabeth House, York Road, London SE1.

## Workers win their licences to print

by Paul Flather

Working in bookshops, running a print workshop, interior design, teaching and art therapy, and doing odd jobs, even gardening, are among the ways graduate students have paid their way through the first approved part-time course in printmaking.

Five students have just completed the two-year postgraduate diploma course at Wimbledon School of Art in London, the first to be approved by the Council for National Academic Awards. Their etchings, lithographs, drawings, and carvings are on show at the Bloomsbury Galleries, Bedford Way from today until June 24.

The course was designed by principal lecturer in printmaking Mr Brian Perry, to meet growing demand from students clearly unable to win grants. It costs £228 a year for two days a week in school, plus up to £50 for special materials.

Acceptance has to include scrutiny of a student's plans to raise funds and survive the course, as well as academic and artistic potential.

Celia Moss, who is 27, works four days a week in a bookshop to allow her two days a week in the school printing her etchings.

Rachel Woodnut, 25, teaches adult education classes and undertakes private decorating work whenever she needs money. She moved up from four days a week in school at 6.00am to begin her days in school at 6.00am commencing up from Southampton.

Colin Dyer, 29, has worked in hospitals, on building sites, and in local government, before finding his niche in printmaking, running a studio for a well known print artist, Ruth Martin.

Mr Perry who also sits on the CNA, fine art panel is in no doubt about the success of the course. He keeps interviews down to 60 but the standard and numbers of applications is increasing.



Tutor Peter Matthews with Wendy Holt and Celia Moss

## College ballots idea floated

Ballots in the colleges are a possible outcome of discussions within the lecturers' union on new ways of electing its national leaders.

The 76,000 members of the National Association of Teachers in Further and Higher Education are evaluating a discussion document circulated by the executive on alternatives to the present system under which the 25-strong executive is elected by the 120-member national council which in turn is elected by the 14 regional councils.

Direct elections would reduce the influence of union activists who attend regional and national councils, and could be expected to steer the union to the right.

Four possible methods of election suggested for consideration are:

- postal ballot;
- ballot papers issued by branch officers—cheaper but held to be open to abuse and accusations of malpractice;

## Catholics launch peace trust

A Roman Catholic organization has set up a charitable trust to promote research, produce educational materials and provide support for students in peace studies.

The aim of the Christian Peace Education Trust, established by the British section of the Catholic Pax Christi movement, is to help people understand the roots of national and global conflict in light of Church teaching on war, justice and peace.

Mr Brian Wicker, principal of Fircroft College and a trustee of the new organization, said it was not sectarian in its Catholic origins. "It is not a pacifist trust either, but is concerned to develop and promote education for peace in the light of Christian teaching," he said.

The trust has been set up in response to widespread demands from within the Church for more effective education at all levels. It will aim to work through adult education in the Catholic community as well as schools and seminaries.

## Strand favourite site for merger

by Ngaio Crequer

The best site for a merged King's, Queen Elizabeth and Chelsea college in London would be at the King's site in the Strand plus part of Somerset House and Cornwall House.

This is the main conclusion of a document drawn up by representatives of all three colleges which has gone to the college councils for preliminary consideration. Cornwall House is an office building at the southern end of Waterloo Bridge.

According to the document a single site operation eventually is the main objective, although there are a number of equally credible prospects for a two-site operation. Here (the King's College/Chelsea College options offer the best choice in quality of environment, development potential, programme and capital cost).

The document says: "The King's/ QEC options fail to provide two campus alternatives, nor does QEC offer the potential of a single campus. The King's/Denmark Hill option would be difficult and most expensive to develop and offer in Denmark Hill a setting of low environmental quality."

The colleges asked architects and quantity surveyors to carry out site feasibility studies and 16 different

options have been costed, on the basis of which buildings could be retained and developed and which sites sold. The costs range from £14m to nearly £60m.

In the short term, it will be necessary to work on three main sites. The document also urges cost-effective appraisals of converting existing academic buildings at Camden Hill (QEC) and King's Road (Chelsea) to residential use, this being preferable to disposal.

Between them the three colleges have a deficit of more than £2m and each will be responsible for securing its own financial viability preferably before merger, now anticipated to be October 1984. There will be nearly 6,000 students and some 525 academic staff at the combined college.

Each college has its own royal charter and if they become a single institution they will need a new one. "It is worth noting that the Privy Council is currently looking very carefully at proposals for new charters, especially in the way they may embody the concept of academic tenure. The colleges may find therefore that it may be better to consider amending one of the existing charters to include all three institutions," says the document.

## New emphasis wanted to teach young self-help

by Patricia Santinelli

Dramatic changes are needed in education if young people are to become self-sufficient in a world where opportunities to work for someone else are now rare.

This is one of the main conclusions of a new book, *Self-Sufficiency—16-25*, which is being published by Kogan Page next month. Its authors Richard Bourne and Jessica Gould argue that there is too much noise about the evils of unemployment and too little positive action.

They examined various schemes and projects in the UK designed to provide financial help and practical advice to young people who wish to set up their own businesses.

"Education is still very much geared towards preparing young people to work for someone else, a commendable proposition in times when employment can be found but an insufficient answer to the problems of 1983 and the immediate future," they say.

## More thought for food

Medical education needs greater emphasis on human nutrition, according to a group of academic biologists and doctors reporting for the British Nutrition Foundation.

Their report, produced by a BNF "task force" chaired by Mr Joseph Rank of Rank Hovis Macdonough, says that one academic unit in each medical school should take a special interest in nutrition. At the moment, the working group found that only about 40 per cent of medical schools had anyone to coordinate pre-clinical teaching of nutrition. Fewer still made an effort to coordinate teaching of the subject to clinical students.

Introducing the report, Professor Albert Neuburger of Charing Cross Hospital Medical School suggests that nutrition should play a much larger part in the teaching of both medical undergraduates and postgraduates, though it need not necessarily be taught as a separate subject.

The report also calls for closer research and teaching links between medical schools and non-clinical research centres, and it suggests that the medical royal colleges set up a working party to review nutrition education for medical students and junior doctors.

Dr Juliet Gray, the task force's secretary, said that the BNF hoped such a group would get off the ground, as the royal colleges would be better placed to suggest ways of changing the curriculum to meet the BNF's recommendations.

*Nutrition in Medical Education*, British Nutrition Foundation, 15 Belgrave Square, London SW1.

## SERC urged to build accelerator

by Jon Turney  
Science Correspondent

A report on nuclear physics for the Science and Engineering Research Council argues strongly for a new multi-million pound accelerator to be built at the council's Daresbury laboratory.

The report, written for the SERC's nuclear structure committee by a group under Professor George Morrison of Birmingham University, reviews needs for new facilities in the field.

It concludes that the most fruitful option for British nuclear physicists would be a medium high-energy electron accelerator, costing around £6m. The report says a design study should begin now with a view to running the machine within five years.

The committee was set up in 1981 to review the state of the field, and its report emphasizes that nuclear physics is both scientifically promising and industrially useful.

Nuclear physicists focus on the details of atomic structure rather than the more glamorous elementary particle physics pursued on the really large international accelerators. They have access to the new nuclear structure facility at Daresbury, which finally became available for experiments this year.

But in spite of the existing investment at Daresbury, the committee believes that "the number of UK nuclear physicists has been allowed to decline to dangerously low levels for a country with advanced industrial facilities."

The report estimates that the number of active nuclear physicists in the UK fell from 355 in 1970 to 225 last year. It implies that the benefits of nuclear research, which in the past have contributed to cosmology, energy research, development of radioactive tracers and solid-state physics, will be in jeopardy if British scientists are denied a further new machine of their own.

The committee also stresses the importance of formal collaboration in the field and urges that more money be made available for cementing ties with foreign institutions running different types of accelerators for probing nuclear structure.

In particular, it discusses the possibility of a £20m addition to the Daresbury machine to produce a powerful heavy-ion beam. But the committee concluded that British researchers' need for access to such a machine could be met more easily by links with similar facilities in Europe.

Professor Bill Phillips, chairman of the SERC nuclear structure committee, said this week that the proposed machine for Britain was relatively cheap compared with other projects in big science.

A long range plan for nuclear physics, report of the working party on future facilities to the nuclear structure facility, SERC 1983.

## Monetarists reap birthday rewards

Tough monetarist thinking by academics has been handsomely rewarded with three knighthoods and a CBE, all included in the Birthday Honours list announced last week.

There are also knighthoods for Dr Alwyn Williams, principal of Glasgow University, for Professor Stephen Spender, the poet and critic, and for Mr Patrick Neill QC, warden of All Souls, and for five years chairman of the Press Council. He becomes vice-chancellor of Oxford University in 1985.

Michael Atiyah, the Royal Society research professor at the Mathematical Institute of Oxford University, one of the country's outstanding mathematicians, is also knighted as Professor Robert Boyd, director of the Mullard Space Science Laboratory, and professor of physics at London University.

Mrs Thatcher's three close aides who are knighted are Mr Terence Burns chief economic adviser to the Treasury since he was seconded from the London Business School in 1979; Professor Alan Walters, her principal economic adviser since 1981, on leave from his chair at Johns Hopkins University, Maryland; and Mr Alfred Sherman, aged 63, a co-founder of the Conservative Centre for Policy Studies.

Scientists are well represented in the list, which includes Eric Ash, professor of electronic and electrical engineering at University College London, and Barbara Clayton, professor of chemical metabolism at Southampton University, both created CBEs.

There have previously been complaints that not enough awards have gone to university vice chancellors but even so the award to Dr Williams is surprising because he has been a stern critic of the cuts.

Dr Peter Clarke, principal of Robert Gordon's Institute of Technology in Aberdeen, a strong supporter of vocational education, is created an OBE, while Mr Stanley Percival, principal of Charlotte Mason College of Education, is appointed an OBE.

There are also awards for three polytechnic lecturers from Birmingham, Leicester and Oxford, and one college lecturer. Mr Albert Blagrove, who became a porter at Balliol College, Oxford, just after the war, and was 81 last week, was given the BEM.

Mr Michael Posner, who leaves as chairman of the Social Science Research Council in the autumn after steering it through very rough waters, is created a CBE as he has previous chairmen, while Sir Frank Cooper, former head of the Ministry of Defence, now on the SSRC, is appointed a Privy Councillor.

Privy Councillors: Sir Frank Cooper, permanent under secretary of state, Ministry of Defence 1976-82.

Knighted: Michael Francis Atiyah, Royal Society research professor, Mathematical Institute, University of Oxford; Robert Lewis Fullerton Boyd, professor of physics, University of London and director of Mullard Space Science Laboratory; Terence Burns, chief economic adviser, HM Treasury; Patrick Neill, QC, chairman, Press Council, and warden of All Souls College, University of Oxford; Alfred Sherman, for political service; Professor Stephen Spender, poet and critic; Alan Walters, personal economic adviser to the Prime Minister; Alwyn Williams, principal advice councillor, University of Glasgow; William Maxwell Harris Williams, president, the Law Society of England and Wales; Robert William Young, educational and public services, particularly in Scotland.



Alwyn Williams: cuts critic

CBE Professor G. A. H. Elton, chief scientist, Ministry of Agriculture.

CBE D. M. Arnold, Heather professor of music, Oxford University; E. A. Ash, Fender professor of electronic and electrical engineering, University of London; P. C. Ash, Fender professor of chemical metabolism and human nutrition, University of Southampton; Professor J. P. Cooper, director, Welsh Plant Breeding Station, Aberystwyth; G. E. Fogg, professor of marine biology, University College London; Professor N. W. Frost, chief scientific officer, Department of Industry; E. J. Gibson, deputy chief scientific officer, Department of Health and Social Security; H. Morris-Jones for public services in Wales; J. Leathley, principal, Derby College of Further Education; M. Macmillan, lately controller, English language and literature division, British Council; Professor W. N. Medlicott, senior editor, Documents on British Foreign Policy; J. H. M. Finkerton, professor of microbiology and genetics, Queen's University, Belfast; M. V. Posner, chairman, Social Science Research Council; Mrs M. H. Rule, archaeological services to the Ministry of Defence; Professor J. C. Smith, member Criminal Law Review Committee; Professor O. L. Wade, dean, faculty of medicine and dentistry, University of London; A. Yates, lately director, National Foundation for Educational Research in England and Wales.

OBEs: Professor R. J. Adam, for political public services; P. J. Black, professor of education and director, Centre for Science Education, Chelsea College, London; Professor D. H. Dewy, scientific consultant, BP Research Centre, Sunbury; J. G. Dunkley, chairman management committee, school of Dental Therapists; Miss M. G. E. Giles, principal department of Education and Science; K. Grosche, lately principal, University of Leicester; F. W. Hawkins, inspector of schools, Department of Education and Science; F. G. H. Lupton, deputy director, Plant Breeding Institute, Cambridge; A. P. C. Mallett, naval historian for services to raising of Mary Rose; R. A. Maguire, partner, Maguire and Murray, head of department of architecture, Oxford Polytechnic; K. D. Meale, lately principal scientific officer, Herbarium, Botanic Gardens, KEW; J. A. E. Morley, chairman, Plunkett Foundation for Cooperative Studies; Y. Neuman, head, Advanced Solo Studies, Guildhall School of Music and Drama; R. E. Parker, member, N. Ireland Nature Reserves Committee, senior lecturer in botany, Queen's University, Belfast; S. W. Percival, principal, Charlotte Mason College of Education, Cambridgeshire; Miss E. D. B. Thompson, member, scientific staff, medical Research Council, Medical Sociology Unit, Aberdeen; G. H. Wilson, chief inspector of schools, Director, Education Services, Kildare Council; O. T. Young, services to peptide chemistry.

CBEs: Miss E. A. Beal, lately director of Blingley, lately warden and director of student, Flinford Hall Field Centre; Miss J. Clarke, lately senior administrative officer, Education Welfare Services, Inner London Education Authority; P. V. Jones, lecturer in classics, Newcastle University; Mrs V. P. Marzetti, principal lecturer in multilateral studies, School of Education, Leicester Polytechnic; M. L. Mullender, senior scientific officer, Ministry of Defence; G. E. Robinson, head, department of music and computer studies, Belfast College of Technology; M. N. Ruffell, registrar, Association of Certified Accountants; Mrs M. E. C. Stewart, for services to archaeology in Scotland; D. H. Tili, principal lecturer, faculty of engineering and science, Birmingham Polytechnic; H. E. Tompkins, department supervisor, department of biochemistry, University College, London; P. C. Turner, education officer, HM Prison, Exeter.

BEM: R. A. Black, cartographic draughtsman, Ordnance Survey; A. E. Blagrove, porter, Balliol College, Oxford; F. Holmes, charge hand, Science and Engineering Research Council; J. R. Worden, chief technician, North-East London Polytechnic.

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## Overseas news Campus tax dispute suspended

from Janet Hook WASHINGTON

The US government would be temporarily prevented from collecting taxes from colleges that provide low-cost housing for their faculty members, under legislation approved by Congress this month.

The prohibition has been proposed in response to a long-standing dispute between colleges and the Internal Revenue Service, the US tax-collecting agency, over whether reduced-rent housing provided to employees is a fringe benefit that should be taxed.

At issue is a common university practice of providing faculty members with college-owned lodging at below-market rents. Many colleges offer employees accommodation at lower rates, charging just enough to cover their operating expenses, because they want faculty members to live on or near the campus.

But the Internal Revenue Service has contended that the difference between the market value of college-owned housing and the lower rates charged to professors should be considered a form of income, on which tax should be paid.

For several years the IRS has been trying to collect taxes from four New England institutions - Amherst, Smith, and Wellesley colleges, and Wesleyan University - that have offered reduced housing to faculty. Tax analysts say the IRS's claim that the colleges should have been withholding taxes from the pay cheques of employees who participated in their housing programme would cost each of the colleges hundreds of thousands of dollars.

The IRS efforts would be blocked, under an amendment that the House of Representatives has tacked on to an omnibus Appropriations Bill. However, because the Senate voted to drop the amendment, from its version of the Bill, the housing tax ban is expected to be the subject of negotiations between representatives of the House and Senate.

The prohibition on collecting the taxes would technically expire on September 30.

The question of what fringe benefits should be taxed has been a matter of debate since 1978, when the US Supreme Court ruled that employers did not have to withhold taxes on employee benefits such as meal allowances if they had a "reasonable basis" for believing that the benefits did not constitute wages.

The same year, Congress passed a law prohibiting the IRS from issuing regulations that would levy new taxes on fringe benefits - a moratorium that was imposed to give legislators time to give further consideration to the issue.

Critics of the IRS's efforts to collect back taxes from the four New England colleges say the agency is violating the moratorium, because the agency had not in the past sought to collect such taxes.

Congress will have to resolve questions about the tax status of fringe benefits by the end of this year.

## Universal youth allowance advocated

from Geoff Maslen MELBOURNE

Up to 300,000 young Australians could transfer from the full-time labour market to the education system if a universal youth allowance was available, according to a Melbourne University economist.

Dr David Ironmonger, acting director of the Institute of Applied Economic and Social Research at the university, believes the introduction of such an allowance could lead to a substantial increase in employment of adults aged 20 to 64.

This would result from the direct replacement in jobs of about 150,000 teenagers at present in full-time employment, the employment of some 15,000 additional secondary and tertiary teachers, and also by the indirect effects of the additional employment needed to supply goods and services resulting from the change.

## Left breaks dominance at Tel Aviv

from Benny Morris JERUSALEM

Left-wing student union factions have won a resounding victory at Tel Aviv University, assuring the left's takeover of the National Student Union later this year.

The victory in TAU came three weeks after a similar defeat of the right at Jerusalem's Hebrew University.

Alternative, the faction affiliated to the Labour Party and groups to the left, won some 75 per cent of the votes in the record 7,900 turn-out (of the total TAU student population of some 16,000). In the 1979 union elections, for example, only 256 students voted.

Alternative's victory followed eight years of dominance of the union by the right-wing Students and Academics United, a faction which is similar to the defeated right-wing Knesset group at the HU, which had dominated Jerusalem's student union since 1976.

The university withdrew its recognition from the union last year following repeated charges against the union of financial and electoral malpractice.

A TAU spokesman, following the elections, said the administration will now ask the university's executive committee to recognize the new elected representatives as the official student union.

The university has formulated new rules, which include the adoption of a new union charter, which the union will have to follow.

The swing in the elections was attributed by observers to the right-dominated union's repeated clashes with the university administration.

With TAU and the HU together numbering over 36,000 students, or just over half the country's student population, Labour and the other left factions are certain to win a majority at the National Union of Students executive committee elections later this year - ending the six-year right-wing dominance of the NUS.

Dr Ironmonger says a universal allowance would be a more sensible form of financial incentive for teenagers than present systems which offer scholarships, family allowances, or tertiary allowances to a minority of students.

At present, education assistance schemes amount to some A\$150m, family allowances to more than A\$120m, and unemployment benefits to about A\$20m in support to those aged 15 to 19.

Under Dr Ironmonger's scheme, an allowance of A\$20 a week would be paid to 15-year-olds, A\$30 to those aged 16, and so on up to A\$60 a week to those aged 19.

This would lead to an outlay of youth allowance payments in excess of A\$120m a year, giving an apparent net cost of around A\$800m but Dr Ironmonger proposes a gradual introduction of the allowance scheme over a period of five years.

"A strategy to provide a universal youth allowance combined with a strategy on the education front to provide appropriate places in technical and secondary schools - with some additional courses in colleges - would enable a shift of 300,000 young people, by their own choice, from participating full-time in today's labour market to participating in a more adequate educational preparation for the labour market demands of tomorrow," Dr Ironmonger says.

Although there has been a dramatic shift in the last 30 years in the educational participation rates of Australian teenagers (they have more than trebled since the war), the fall-off in full-time educational participation in Australia between the ages of 15 and 19 is markedly at variance with Japanese and American figures.

They show full-time educational participation rates at age 17 in excess of 80 per cent, almost double the Australian rate.

According to Dr Ironmonger, this continuation of educational investment for teenage boys and girls in Australia's trading partners must give them a decided advantage in the depth of their "human capital". "For example, the rate of adoption of new technology probably depends as much on the availability of skilled and innovative individuals who can cope with innovation as it does on the availability of the technology itself," he says. "In a rapidly changing technical environment, these few additional years of educational participation may well be a critical factor in the rapid adoption of improved methods."

Dr Ironmonger's comments come at a time when the Labour government is attempting to develop a youth policy and a programme intended to attract 30,000 new students to secondary schools and technical and further education over the next three years, and 25,000 new enrolments in universities and colleges by 1990.

## Science needs stressed

by Peter Manger

Speaking at the second national conference on educational science planning in Beijing (Peking) last week, minister of education He Dongchang urged researchers to study all experiences, both domestic and foreign, to find the correct socialist educational system best suited to the country.

Marxist views and methods should be used, he said, to analyse major questions such as education's relations with economics, politics, culture and science.

To augment the inadequate number of 1,200 professional educational science researchers, more college students, postgraduates and young teachers should be recruited. Funds for educational research should be increased, international academic exchanges promoted, and experimental bases for educational research established.

The necessity for more emphasis on science was "stressed" by Hu Quianou, chairman of the state council's academic degree committee, at a meeting to confer China's first PhD and masters' degrees.

"The whole nation," he said, "is at present concentrating on socialist modernization, striving to develop the social productive forces and build up a socialist spiritual and material civilization. At a time when science and technology is developing with leaps and bounds throughout the world, the role of science and technology in producing greater economic results is of growing importance."

"China has to rely on science and the training of talented people in science to raise productivity and develop the national economy. The cultural and ideological life of the people also demands large numbers of specialists. In this sense, the question of whether China can independently train the talent it needs for socialist modernization, particularly high level personnel with a PhD or masters' degree has become the crux for the success of socialist construction, as well as a key question concerning the independent and comprehensive development of the country's education."

China would train its senior professionals independently, he said, but a certain number of research students would continue to be sent abroad to study those branches of science which are relatively weak in China.

There are some 600 in UK universities at the present time. A gigantic effort was needed to create a teaching and advisory force drawing in professors and scientists with high academic qualifications; foreign scholars and specialists would be invited to help in newly emerging and relatively weak areas.

## Helping China from space

The Chinese Academy of Sciences has launched a five-year space monitoring programme aided by a group of foreign universities. The project is intended to arrest an ecological disaster of yet unassessed proportions arising from a reckless land reclamation scheme which is retarding wheat production in the country's foremost agricultural area.

The region under surveillance comprises some 300,000 square kilometres in the North China Plain which produces 39 per cent of the nation's total wheat and 41 per cent of its cotton yield. Vast and rapidly growing stretches of land across that breadbasket region are affected by salinity and alkalinity, effectively postponing China's long-term objective of agricultural self-sufficiency.

The remote sensing project follows a visit to China by scientists of many disciplines brought together by the United Nations University (UNU) from 10 countries. UNU hopes that the collaboration will lead to improved consultation between the universities and agricultural development planners in many countries averting similar disasters in the wake of ambitious land reclamation programmes.

The visiting specialists were told that the local water table had declined by as much as 2.5 metres at some places.

languages abroad, with these studies now continuing in Mexico. Now with the "controlled" scholarship programme, which may even call for further suspensions, the expectation is that official investment in "serious" students will pay dividends. Once they start practicing their professions they are theoretically committed to reimburse the government in the amount of scholarship funds received.

While in theory, the recuperation of scholarship monies has a sound base, it does not work out in practice. For example, while government statistics minimize the fact, there are over 9,000 ex-scholarship recipients about whom nothing is known. Recent research by National University of Mexico investigators has stressed the fact that Mexico has constantly experienced a substantial annual loss in foreign exchange because students sent abroad by Conacyt, or other official organizations, scarcely ever return to apply their acquired knowledge in Mexico.



President Jayewardene: briefed on incidents

## Students flee racist attacks

from D. B. Udalgama COLOMBO

Tamil undergraduates at the University of Peradeniya have fled the halls of residence, following a racist attack on them by their Sinhalese students.

It appears that English and Sinhalese notices at the university were found to be defaced whereupon the Sinhalese students are reported to have rounded up the Tamils and forced them to deface the Tamil notices. The Tamil students were reported to have been attacked and their rooms ransacked and ordered to leave by 6 a.m. the following morning.

Tamil students in a hostel of the medical faculty of the University of Colombo have also left, following another racist incident. The vice-chancellor of the university, Professor Stanley Wijesundera has said that the incident arose between two individual students which some other people had exploited.

The chairman of the University Grants Commission, Dr. S. F. Kalpage, after discussions with the Tamil students of Peradeniya, briefed President J. R. Jayewardene who is also minister for higher education.

Mrs. S. Thondaman, a cabinet minister and president of the Ceylon Workers' Congress which represents plantation workers of Indian origin, also made representations to President Jayewardene. Mr. Thondaman pointed out that the marshals and wardens at Peradeniya had failed to give protection to the Tamil students.

The council of the Peradeniya University has appointed a fully the committee to investigate fully the events at the university in order to prevent a recurrence of such incidents.

Meanwhile lectures continue to be given at Peradeniya though no Tamil students are there to attend them. The University Teachers' Association at Peradeniya condemned the attack on the Tamil students.

The vice-chancellor, Dr. B. Pandharatnam, has been quoted as saying that lectures would be repeated when the Tamil students return. They have been asked to return to the university and assurances have been given that they will be given full protection.

## Protest over nuclear laboratory

Nearly 200 protesters delivered "death warrants" to the president of Stanford University earlier this month, in opposition to proposed nuclear weapons-related research at the university's synchrotron radiation laboratory. Elsewhere, a staff committee on research held that a standing policy to judge projects on their scientific merit and not their potential application covers that proposal.

Several teaching and research staff had earlier expressed concern to the committee that they would be forced into involuntary servitude by providing beams used for weapons-related research at the laboratory.

The demonstrators paraded peacefully behind a skull-faced drummer, streaming in-and-out in single file through the president's office and piling their "warrants" on the desk of his chief-of-state. Among several banners demonstrators carried was one reading "Keep Star Wars on the screen."

The president, Mr Donald Kennedy, has repeatedly backed the policy, which sets no limits on research based on prospective end-use. He agreed that a department within the university might adopt more restrictive rules than the institution as a whole but strongly questioned such a departure.

The controversial proposal was developed by scientists with the Lawrence Livermore, Sandia, and Los Alamos national laboratories, who seek \$5m from the federal Department of Energy's office of military applications. Additionally, the University of California would provide \$1m for its staff to conduct beam research at the Stanford facilities.

Mr Daniel Ellsberg, regarded as a veteran antiwar demonstrator, told the Stanford crowd that most of the students at the nearby University of California "are not aware that they're part of a bomb factory."

## Clamp on foreign researchers

from E. Patrick McQuaid WASHINGTON

Under new guidelines formed by a panel of university scholars and Pentagon officials, institutions receiving federal grants and contracts would be expected to bar foreigners from particular "sensitive" research projects and accept a 60-year pre-publication review of such data by government agents.

The specific conditions would be spelled out in individual grants and contracts between the government and the universities. The guidelines were discussed publicly during the annual meeting of the American Association for the Advancement of Science, held in Detroit.

Shortly before his resignation as deputy-director of the Central Intelligence Agency, Admiral Bobby Inman last year warned American colleges and universities that if they did not take steps to curb what he called "the

haemorrhage" of technological data to the Soviet bloc, the government would have to restrict university-based research.

Since then the Pentagon has been engaged in a lengthy study of technology leaks in conjunction with the National Security Council and the Office of Science and Technology. It remains unclear exactly what the implications of the University-Pentagon agreement will be until this study is complete.

President Reagan, however, has issued directives that greatly expand the areas of research the government may label as classified despite a report by the National Academy of Sciences which concluded that the Soviets gained "little if anything of economic and military significance" by lifting data from unclassified research. The White House is expected to review the inter-ministry study and issue new policies of wider application concerning unauthorized technology transfer some time next year.

## South African students clash with police

from Craig Charney JOHANNESBURG

Violent clashes occurred after protests at two black South African universities following the hanging of three convicted black nationalist guerrillas belonging to the African National Congress.

Full details were not available but press reports said that at the University of Zululand, a police car and a shop were damaged after the conclusion of a commemorative meeting attended by 700 students.

Some 21 students were reported detained by security police in the Ciskei "homeland" after a one-day class boycott at Port Hare University to mark the executions.

Meanwhile, student journalists at the University of Cape Town (UCT) have been convicted by a university disciplinary court after an incident in which they embarrassed a cabinet

minister. They were charged after the UCT student newspaper published remarks that the black affairs minister, P. J. Koornhof, made in a campus lecture although the principal, Dr Stuart Saunders, had told them not to.

The reporting of the minister's liberal-sounding remarks caused a political flurry as they appeared to contradict reaffirmations of apartheid by the ruling National Party in key by-election campaigns then under way.

Before the trial, 500 students staged a protest meeting at UCT, an English-medium white institution normally considered one of South Africa's most liberal universities. However, Dr Saunders forbade the campus media to discuss the dispute and barred the 18 students involved from speaking to the press.

Their June 3 trial was held behind closed doors and the number of students convicted has not been disclosed.

## Double talk at Harvard

Harvard University heard commencement address speeches from two principal guests this year. Solidarity leader Lech Walesa, the first choice, decided not to attend for fear of not being allowed back into Poland. Mexican author and statesman Carlos Fuentes agreed to stand in. But just days before the event a 12-page speech arrived from Mr Walesa. Harvard decided to have excerpts from the Walesa text read out and Mr Fuentes delivered his address as planned.

## Variety club

Leaders of 57 different American religious groups last week urged Congress to initiate action aimed at banning genetic engineering in humans. The committee, composed of Fundamentalist Christians, other conservative Protestant groups, 11 mainline Protestant groups, 25 Jewish groups, and 25 Roman Catholic bishops, were joined by six chemists and biologists at a New York press conference to say their stand was not "anti-science."

## Staff reprimanded

The backlash from Dr John Darsee's misconduct at Harvard continues. At Emory University, in Atlanta, Georgia, medical school officials have reprimanded senior teaching staff responsible for supervising Dr Darsee's work while a resident and fellow in cardiology from 1977 to 1979, just before his Harvard appointment. Dr Darsee was barred from government-sponsored research for 10 years after it was learned that he had fabricated heart attack data.

## Tent protest

Students at the University of Illinois, in Chicago, have protested against rises in tuition fees and cuts in state-funded support by erecting a "tent city" reminiscent of the great depression. About 100 camped for three days outside the student activities centre.

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Mr. Eric Colley with his wife, outside their home in Liverpool.





# Police teaching's black side

A controversial set of essays written by Hendon cadets caused a storm which spread from the police college to the lecturers' union. David Jobbins reports

Relations between black people and the police are once more tense and strained on Brixton's front line.

Whatever the success or failure of community policing, when the flash-point ignites it is the deep-seated prejudice of black against police, police against black, which comes to the fore. Striking evidence of the prevailing attitudes of police recruits emerged late last year when a civilian lecturer at the Hendon police cadet school handed over 62 essays written anonymously by his class to a television team.

The most inflammatory phrases from the essays immediately hit the headlines but an eminent educationist who read the entire batch shared the horrified reaction of the lecturer, John Fernandes, at the general tone.

The *THES* this week reproduces a selection of the essays, broadly in proportion to the general groups into which they fell and outlines the developments since the London Weekend Television *Eastern Eye* programme was broadcast.

Fernandes asked his cadets to write the essays some time before April last year. He was seconded from Kilburn Polytechnic, and teaching on a multi-cultural studies course established at the request of the police. The course bridged two cohorts of cadets (confusingly called Phase 1 and Phase 11) both taught by civilian staff, according

to one report because they would have had light tinctables if they had taught only Phase 1.

Phase 1 cadets had already taken the multicultural course and it was felt inappropriate that they should take it again when they passed on to Phase 11. At this point disagreement broke out between Fernandes and some of his colleagues on the unit and the school.

Influenced by the essays, he sought to "beef up" the section of the course dealing with racial prejudice in British society and tackle head on the question of racism among the cadets.

Instead, retrospectively backed by the Kilburn academic board, the police proposed a decision-making course for future Phase 11 cadets which, last summer, was adopted by the school. This was to be taught by police staff rather than civilians.

Fernandes saw this as further evidence of the police's "reversed" attitude to anti-racism studies, reinforcing earlier difficulties over resources and timetabling.

In a letter to the head of the school, Commander Richard Wells, in September, Mr Fernandes wrote: "We... have put in a lot of time and effort of our own in the last nine months to try to get this course off the ground. It has not been an easy struggle. Having had official approval from the academic

board and you, we were settling down to teach the course only to find that decisions taken elsewhere jeopardize the credibility of the course."

Through a friend Fernandes, frustrated and desperate, approached the producer of *Eastern Eye*, Mr Samir Shar.

The authenticity of the essays has never been questioned, although during the *Eastern Eye* programme it was suggested that some cadets might have been having a joke at Fernandes' expense. But, says Professor Harold Rosen of London University's Institute of Education, jokes can be a serious matter too - if some of the essays were jokes.

He was presented with the 62 essays by the television team and horrified at what he read. "They were polarized - this seemed the most important thing. It is as though either the selection process tends to pick up people - or people are attracted to the police - already having racist views, or their experience in the police leads them to have racist views."

According to the professor the views expressed were not the wide range expected in a group of 16 or 17-year-olds. "Something was happening to push them down to one end of the spectrum."

He felt this should be of concern to the police, and he still feels that the

response was inadequate.

Categorizing the essays is difficult because of the subjectivity of the issue, but about a third seem to show clearly racist sentiments. A handful, one of which is quoted in full alongside, are positively against racism and would like to see it excised from the police force. The majority, while not actively racist, transfer the roots of conflict to coloured people themselves and their apparent inability to adopt British working class values.

Only a few refer to the underlying causes of discontent such as poor housing and unemployment. There are frequent references in requests for further information to the National Front, often as the initials NF.

The need for tighter immigration controls is a recurrent theme, and the role of the police is discussed only occasionally. There are one or two



John Fernandes: tried to 'beef up' section of the courses dealing with prejudice

references to the Scamman report - odd, given that the essays were written in the period to April 1982 when the report was receiving widespread attention both in the police force and elsewhere.

The immediate steps against Mr Fernandes were disciplinary. Commander Wells feeling that a breach of trust and professional ethics had been committed, excluded him from the school. He could not take further action as Fernandes was technically employed by the Labour-controlled Brent borough council. But he is adamantly refusing to reinstate him.

Mr Fernandes' actions and the response to it by the police, Brent and his union, have tended to cloud the original issues of police racism and how education can seek at least to contain it.

## How Fernandes fell out with Natfhe

John Fernandes is now embroiled in an intractable dispute not only with the police school but with his own union.

When banned from the school he declined to accept aid from the National Association of Teachers in Further and Higher Education on a confidential "casework" basis, preferring the support of his branch at Kilburn Polytechnic for a wider campaign within the union aiming for reinstatement to his post and the multi-racial elements of the multicultural course.

General secretary Peter Dawson was drawn to describe this attitude as "unique" in his 14 years with the union. Prior to Mr Fernandes' exclusion on December 2, the Outer London regional council passed a resolution supporting the staff involved in the dispute, but the first national leadership officially knew of it was a request for support for strike action received the following day. The request was rejected by officers, but the half-day strike went ahead.

On the same day the Brent Natfhe liaison committee, faced with the threat to withdraw all civilian staff from the school, expressed its opposition to the withdrawal, a view overwhelmingly endorsed the following day at a meeting of 20 of the school staff. The school staff present voted 16-2 to refuse to obey any instruction by Brent to pull out of Hendon.

Faced with this developing split between Fernandes, supported by the Kilburn Polytechnic branch, and the school staff supported by the rest of the liaison committee, the national executive identified the threat of withdrawal as the main issue when it met on December 10.

The line being pursued by the regional executive was considerably tightened up when the regional council met early in February and demanded the restoration of the course under Mr Fernandes' direction. By this time Kilburn branch was becoming increasingly isolated within Brent for its unqualified support of the local authority's tough stance.

By March 3, when the liaison committee met, the gulf had become intolerable. A catalogue of incidents, the interpretation of which is highly controversial, led the liaison committee to call on the "good offices" of the regional executive to stop Kilburn actively and publicly campaigning against union policy - its support for the threat to withdraw the staff.

By this time the staff at the school had already broken away to form their own branch - a move endorsed by the regional liaison committee and effective from February 23.

Of the 26 staff then at the school, 21 voted in favour. Although the sites are some seven miles apart, there was far more to it than the convenience of

attending meetings.

At national level the union's first substantive response came at a national executive meeting in mid-January. Many members of the executive, not alerted in advance to the programme, had only learned of the row over the essays from press reports. To this day none has seen the essays themselves.

They attempted to retrieve the situation by calling for a return to the status quo - a reinstatement of Mr Fernandes pending discussions with Commander Wells and Brent.

In a statement it said: "The association deplores the arbitrary exclusion of any member from the school and seeks an immediate meeting with the appropriate police authorities."

It went on to say: "The association does not believe the withdrawal of (civilian staff) against their will to be a constructive solution and it cannot be accepted by their trade union. It calls on the Brent authority, which has a prominent position in the field of race relations, to refrain from such an action and play its full part in ensuring an acceptable education for police cadets."

Nevertheless Brent, determined to take a hard line with the school, and accepting that legal action to force Mr Fernandes' reinstatement was not on the cards, went ahead.

At the beginning of the summer term, staff were told not to report to the police school, but to enter into discussions with officials about redeployment elsewhere in the borough. Councillors gave an undertaking that there would be no compulsory redundancies as a result, but union leaders remain sceptical.

In the event the school was split down the middle. Nine, including the remainder of the multicultural unit, defied their union, and obeyed the authority's instruction. Sixteen, stuck with Natfhe and reported for work as usual.

Also at its January 15 meeting, the executive decided to set up its own full-scale investigation into the Hendon affair and its wider ramifications.

That committee, initially chaired by Mr Frank Griffiths of Teesside Polytechnic, presented its interim report two months later, having met six times.

Its conclusions were that Mr Fernandes' actions had been damaging both professionally and to the case he sought to advance.

"Had the content of the essays been dealt with professionally at the time they were written, progress with the police would have been made sooner on the issues of police recruitment and the inclusion of appropriate elements of racism awareness training and anti-racist studies in police training."

"The disclosure of the essays to and by the media so long after they were

written and the failure beforehand to provide the association with an opportunity to act decisively and vigorously to raise the racism revealed within them has actually hindered rather than advanced the continuation and improvement of anti-racist teaching for all cadets."

This view was supported in a letter circulated by the union from Ms Marion Gerrard, a civilian member of the Metropolitan Police working party on human awareness training for recruits. She remarked that at least some senior officers were beginning to take the issue seriously.

"There will no doubt have been (and remain) strong opposition within the force to the initiatives being taken to improve race training - certainly if the attitudes revealed in the John Fernandes essays are in any way typical. It is therefore of critical importance that we welcome those initiatives which have been taken and encourage their further development. I believe the John Fernandes incident and attendant publicity to have been a serious setback."

The group's acceptance of the view that academic freedom is infringed at the school has been challenged by six members of the multicultural unit in a letter signed additionally by others in response to the report.

It quotes from minutes of a meeting between Commander Wells and a Natfhe official in December 1982 that "the commissioner reserves the right to decide what is taught and by whom. There is no room for negotiation around this statement."

Efforts to raise the Fernandes case at Natfhe's annual conference last month were unsuccessful but served to underline the severe divisions which the disclosure of the essays and subsequent events had aroused among the union's members especially in the London area.

Natfhe's outer London region which covers the Brent area, was deeply split even over an attempt by the West Midlands region to secure a debate on the leadership's handling of the affair in private session.

Only deft footwork from the chair by the then president Mr Chris Minto avoided a vote on whether the issue should be aired in which a third of the outer London delegation would have been in support and the majority firmly against.

Now the issue is to be dealt with by the union's July council in camera. The union is facing a crisis which can produce no winner. The probability of Mr Fernandes being able to return to teaching multicultural studies at Hendon is low in a sense this is secondary to the impact of the affair on Natfhe's hitherto uncompromising opposition to racism.

## Masterminding the merger

John O'Leary meets Derek Birley, the man chosen to set up Northern Ireland's new merged polyversity



Seven months after his appointment it seems hardly credible that there was ever any doubt that Derek Birley would head Northern Ireland's intriguing polyversity, so closely has it become identified with his leadership. A strong character who inspires strong reactions, both favourable and unfavourable, among academics and students, he is very much in charge of the merger of Ulster Polytechnic and the New University of Ulster.

As a man with a keen sense of humour, he can see the irony of plotting the shape of the revolutionary new institution from the Jordanstown School for the Deaf and the Blind. It is a measure of his self-confidence that he had no qualms about offering his critics such as obvious target when he vacated the rectorship of the polytechnic and moved out of the main campus.

The move (albeit just round the corner from the polytechnic) is one example of Mr Birley's continuing effort to convince those at the NUU and its constituent college in Londonderry, Magee, of his impartiality. Eventually, he will be making an even more symbolic gesture, basing the headquarters of the university at Coleraine.

Although the role of diplomat is not only which seems to rest most comfortably on his shoulders, the "firm but fair" image which he is projecting does seem to be getting over. There undoubtedly remains some strong opposition both to Mr Birley and to the merger itself, but a majority on all three campuses have now been won over, however reluctantly. It will be surprising if significant opposition is encountered in the forthcoming round of meetings which will be asked to surrender the NUU charter.

That the transition should be progressing apparently so smoothly seemed highly unlikely last year in the midst of the wrangling which followed the merger announcement. The Government plan, announced in March by Mr Nicholas Scott, the minister responsible for higher education in Northern Ireland, came like a bolt from the blue to all concerned. Mr Birley is critical of the way in which the scheme was sprung on an astonished province, regarding the bald announcement as insensitive and leading inevitably to suspicion and automatic opposition.

He is even more severe on the Chilver committee, whose report on Ulster higher education prompted the merger decision, though making quite different recommendations. Mr Birley describes the Chilver proposals, for an even smaller and more specialized NUU operating within the framework of a new committee to oversee higher education in the province, as "a nonsense and an outrage". He believes that the report's conclusions did not follow from its analysis of the situation in Northern Ireland and would have provided no solution for Coleraine.

For all of its pitfalls, geographical and academic, philosophical and practical - not to mention personal - his own job was on the line. Mr Birley has been a supporter of the merger from the start. Many of his own staff and students at the polytechnic were sceptical as their university counterparts, at the outset, fearing that the vocational ethos of a successful institution would be threatened by academic drift, and that their own role in the polyversity might be downgraded.

Mr Birley was confident that the polytechnic was sufficiently strong to win through on both counts and made no bones about his determination to become the vice chancellor. Though the period of uncertainty over the intentions of Dr Wilfred Cockcroft, the NUU vice chancellor, caused some embarrassment, Mr Birley has no qualms about the decision of the steering group overseeing the merger not to advertise the post. He points out that staff in both institutions were adamant that there should be an internal appointment and draws the conclusion that any controversy over the post was unnecessary.

In spite of the objections raised over the appointing procedure, many close observers admit that Mr Birley would have been hard to beat regardless of how widely the net was spread. His public sector background would have been an obvious disadvantage with any other vice chancellorship, but the new institution was a special case. Even Sir Edward Parkes, chairman of the University Grants Committee, conceded in evidence to the Commons Select Committee on Education that the polytechnic had to be regarded as the senior partner in the merger.

One might have thought too that he would be at a disadvantage as an Englishman. But 13 years in Northern Ireland, building up the polytechnic from scratch and coping adeptly with the political and religious minefield that makes up the province, made nationality all but irrelevant. Not surprisingly, he now regards himself as an Ulsterman by adoption and has little desire to return to England.

He was attracted to the province in the first place after reading an account of life at Queen's University by Lord Ashby, then its vice chancellor. Disillusioned with life as a local education authority bureaucrat in Liverpool, the challenge of a "green fields" site with direct funding from the Department of Education in Northern Ireland proved a sufficient lure. Apart from a brief period at Cambridge University, all Mr Birley's working life after four years' service in the Royal Artillery had been spent in local authority employment, first as a schoolmaster and then as an education officer. Six years as deputy director of education in the constantly shifting political environment of Liverpool had given him both the experience in higher education necessary for a successful application and the incentive to get on.

role would change to a basically advisory one. "I would expect us to have a loose relationship with CNAU," he says. "But there is no question of creating the first CNAU university and any relationship with validating bodies would be purely voluntary."

Likewise at sub-degree level, advice assistance will be sought but the university will almost certainly award its own qualifications. "One of the great advantages of university status is that we will be able to integrate courses at different levels," says Mr Birley. "We will have external validation at the planning stage, as well as a full review every seven years, but we will obviously have much more freedom."

Such flexibility is a key element in Mr Birley's attitude to the new institution. He is a vigorous critic of the binary line in higher education. "If that is all the policy we have then it is pretty pathetic," he says. "I have long argued that we are obsessed with institutions in Britain and the binary policy is one example. I hope that the merger may set some sort of a precedent, but not leading to further piecemeal mergers."

The particular conditions which brought about the Ulster merger and the unavoidable geographical separation which will result make it an unlikely model for the United Kingdom in Mr Birley's eyes. But the very fact of its existence he hopes will encourage further breaking down of barriers, leading eventually to a single system of higher education.

The University Grants Committee working party looking at higher education in the province is another welcome step towards his goal of stronger institutional planning. He says: "I would have liked the working party's remit to have been wider, covering teacher education and all of advanced further education, but I am quite satisfied with it. I would have liked it to be looking at the whole question of how to keep young people from going across the water to England to study, but we must all be doing that."

He expects the working party to help reestablish good relations with Queen's University, which got off to a bad start when Dr Peter Froggatt, the vice chancellor, joined and then left the merger steering group in quick time after describing the new institution as a spoiled child which would take an unfairly large share of Ulster's higher education budget. Mr Birley describes the affair, which he admits has left a degree of tension still, as "a family squabble" which will blow over. The fact that the majority of the new institution's staff have connections with Queen's will ensure this, he thinks.

The pockets of opposition which also exist within the new partnership are also expected to diminish as further progress is made towards the actual merger. Mr Birley is anxious to move on to what he describes as "the functional phase" when a "proto council and senate" can be appointed to take over from the steering committee. He believes that the steering committee has fulfilled its potential and that it is time to move onto detailed planning, which has to be carried out by those who will be responsible for the university.

Once this process is under way, Mr Birley believes that the present institutional loyalties will be forgotten to some extent and replaced by departmental considerations in a new internal

scramble for resources. Since the university is to be organized on departmental lines, with some subjects being taught on all three main campuses, identification with the present institutions ought, in theory, to be reduced. Although provosts will be responsible for the Coleraine, Jordanstown and Londonderry campuses, their role will be primarily administrative and pastoral.

In fact, his priority will be to develop Londonderry as a centre for higher education

For the moment, however, Mr Birley is aware of the suspicion which exists at the NUU both about the detailed outcome of the merger and about him personally. "There is little doubt that his leadership will mean some changes which will prove unpalatable at Coleraine. On research, he regarded research as important, but I

want it put on a proper footing with a research committee. I do not believe it is for massaging people's brains or to put on application forms."

He believes that the Coleraine campus has a brighter future in the new institution, but his style still inspires fear from some. He is not trying to emulate a traditional university and there is no way that the desires of all those at the NUU can possibly be accommodated in the new scheme of things. One close observer of his period in charge of the polytechnic says: "He decides what is the consensus and then enforces it."

No decisions have been taken about the distribution of departments between campuses, but Mr Birley is not concerned to match the notional student capacity of each. "I am not going into this thinking: 'I've got all these buildings. How am I going to fill them? That is the road to nowhere,'" he says.

In fact, his priority will be to develop Londonderry as a centre for higher education, both in terms of numbers and qualifications offered. He is dismissive of proposals to give the city its own polytechnic, taking Magee College out of the new institution, claiming that only Sinn Fein of the political parties takes such a line. "If this is the select committee wants, it can only be an example of collective guilt about the silt of CNAU and an attempt to turn the clock back. A Derry Polytechnic would be even smaller and more narrowly based than NUU. It would be quite unworkable now, far better to develop the existing colleges and to press for 'seedcorn money' from the Government to do that."

The merger is now firmly on schedule for the intended amalgamation date of October 1984, although Mr Birley does not expect substantial changes in existing arrangements in the first year of operation. Nor does he see the need for all duplication between the new institution and Queen's to cease. "One rationalization per decade is enough for anyone." But it is a safe bet that well before the end of the decade, the University of Ulster will have emerged as an institution unique in the United Kingdom - and very much in the style favoured by Mr Birley.

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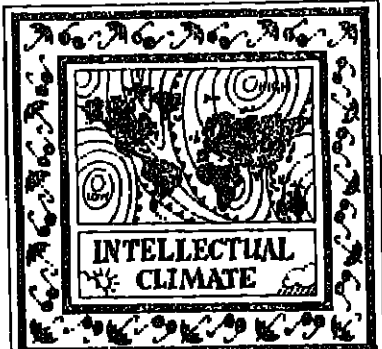
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## Thoughts of revolution

The prospect of revolution is compelling a renaissance of South African intellectuals. Some welcome it, most dread it, but more and more have been forced to choose sides.

In the past, South Africa's intellectual life was largely compartmentalized by language and colour divisions between pro-apartheid white Afrikaners, liberal English whites, and blacks. To older figures, like Professor Philip Tobias, former dean of Witwatersrand (Wits) University medical school, "There is no South African intelligentsia."



**Craig Charney on how South African intellectuals are facing the new divisions of left and right**

Now that is changing. As Glenn Moss, a 1970s student leader who now edits a social science journal, *Work in Progress*, says: "There is a process of polarization in the face of crisis. Left-right divisions are cutting across the racial and ethnic boundaries, while non-conformists face increasing hostility."

The most profound changes have taken place at English-medium white universities like Wits. "Earlier, the debates were between liberals and ideologists of apartheid," according to Dr Duncan Innes, a Wits lecturer who recently returned from 10 years in England. "When I came back, the debates tended to be between neo-Marxists and the liberals on the one hand, and between neo-Marxists and the ideologists of apartheid on the other."

Rifts have opened between the pre and post-1976 radicals. When the older generation grew up, the black nationalist movements and the Communist Party (CP) had been crushed. They were radicalized by the 1968 student rebellions and new left authors like Marcuse. Their classic statement was the late Rick Turner's book *The Eye of the Needle*, a plea for a democratic, socialist South Africa based upon worker self-management.

As a Wits sociologist puts it: "Now they would look at Solidarity for their inspiration, not to the Soviet Union." Many got involved with fledgling black trade unions.

The political consciousness of today's students began with the black uprisings of 1976, and they have been attracted by the subsequent resurgence of the banned African National Congress and the highly orthodox CP.

Despite its divisions, however, the left has become strong enough for an intellectual parting of the ways with their liberal colleagues. In the 1970s, Mr Moss says, "The left was incredibly weak. It had no organizational clout or representation at faculty level. It

tended to be taught by junior lecturers. That absolutely necessitated reliance on liberal tolerance to exist. It's much less of a question now. Junior academics have become senior academics, and courses have changed."

The result has been something of a crisis for the older liberal academics, who still predominate at the English universities. Says Professor Tobias: "The disengagement between the left and the liberals means the liberals are free-floating."

At the same time, he notes, the rise of an urban Afrikaner middle class has moderated the harsh racism formerly shown by Afrikaner thinking. "A large number of the disengaged liberals are finding links in that direction, which inevitably means a diluting of their liberal principles," he says. Even venerable liberal author Alan Paton has declared: "I no longer support majority rule in a unitary state," preferring a federal system designed to hamper black radicals.

Liberal intellectuals are displaying far less interest in the historical and moral critiques of apartheid which marked their work in the 1950s and 1960s, or in the theoretical debates with Marxists of the 1970s.

Today's leading liberals, such as Professors Lawrence Schlemmer and Jill Nassar of Natal University, and Professor David Welsh of the University of Cape Town, are pragmatists. They stress practical, policy-oriented research aimed at renovating South African capitalism, pressing reformist blueprints on government, and acting as an informal "brains trust" for the liberal white and black opposition.

Liberals themselves, however, are divided on how to accommodate the black majority; torn between the desire to win their support and fear of their economic and social domination. A similar division was strikingly

evident in the recent public polemic between two leading *verligte* ("enlightened") Afrikaners. Professor Sampe Terreblanche of Stellenbosch University and Professor Johan Du Pisanie of Pretoria University. (The debate was in the English language press, a sign of the new openness which has replaced the old Afrikaner monolith.)

*Verligte* thinkers have displayed a new urgency since 1976, painfully aware of the threat of black unrest. F. W. de Klerk, the *verligte* prime minister elected in 1978 by the ruling National Party, is far more willing than his hardline predecessor to make use of them.

He has called on *verligte* intellectuals, as well as moderate English liberals and businessmen, to staff a swarm of commissions to solve South Africa's social problems. "The attitude is practically, if you have a problem, we'll appoint a commission," says one government insider.

The *verligtes* have abandoned the explicit racism, support for petty discrimination, and hostility to business which mark traditional Afrikaner thinkers.

However, there are still important differences between them and the liberals. *Verligtes* substitute "cultural groups" for races, and then assert the existence of white "group rights" and identity which must be protected, in sharp contrast to the liberal concept of individual rights.

The splits among white intellectuals have parallels among blacks. "If one looks at the first half of the century of black intellectual life," says Dr Noel Chabani Manganyi of the Wits African Studies Institute, "the kind of education these gentlemen received was immersed in liberal values."

As quality declined and state control increased in black education after the NP took power in 1948, he continues,



Nadine Gordimer, the novelist who wants a culture of reconstruction

"the earlier liberal values and sensibilities that kind of education created disappeared - and the quality of power became much more manifest." These factors fostered radicalism in younger students.

For black and white, the tensions of South African society are finding expression in literature and the arts. There has been a black cultural revival since "black consciousness" took off in the early 1970s, with most of the output some sort of attack on apartheid. Of the major books by black authors in recent years, such as Miriam Tlali, Mongane Wally Serote, Mutuzeli Matshoba, or Sipho Sepamla, almost all fit into this category. At least four novels have been devoted to the 1976 uprisings alone.

Black writers and artists suffer from a whole gamut of constraints, not least inferior schools and censorship. But a more significant problem is that political commitment is widely taken to mean suppressing individualism, with introspection precluded by sloganeering. In addition, blacks undoubtedly suffer from their isolation from Africa by the cultural boycott.

Among white writers, particularly the established, internationally-known English speakers, a *fin de siècle* atmosphere prevails. Two warmly-received recent novels by J. M. Coetzee (*Waiting for the Barbarians*) and Nadine Gordimer (*July's People*) dealt with the importance of liberal values in the face of revolution. In both language groups, there is a notable shortage of new literary blood.

In other arts, however, there are a growing number of cooperative attempts by young blacks and whites to confront South African realities and

construct a common culture. This was shown dramatically when hundreds from both races went to meet expelled South African artists at a conference on culture and resistance in Botswana last year.

There, Ms Gordimer presented a widely discussed paper calling for the creation of a "culture of reconstruction" spanning the racial divide. While the new departures she lauded pose no threat to the imported West End comedies filling most Johannesburg theatres, they are likely to have a growing influence upon young leaders.

Young black and white artists are working and showing together in many cases. Many new theatre companies hold inter-racial workshops, while others, like Johannesburg's Myth Inc, are confronting issues which drive their elders to despair - such as the role of white liberals - with optimism instead.

There is also a minor boom in the production of "relevant" low-budget films and videos by multiracial groups. The surprise recording success of the 1980s has been a band called Juluka, a group of whites and blacks who sing Afro-rock songs in Zulu and English. *Waza Albert*, a light-hearted but pointed fantasy about the second coming in South Africa performed by two blacks, has likewise played to full houses in both white suburbs and black townships.

Indeed, in some ways the intellectual scene in South Africa is reminiscent of that in Russia before 1917. Here, as there, the majority of the intelligentsia is comprised of cautious, conservative liberals, with a radical minority divided between different Marxist tendencies.

Time will tell how close the parallels really are.

Found Ajami was in his New York apartment last June, agonizing over the Israeli invasion of his native Lebanon, when a call came from J. Roderick MacArthur. MacArthur, a son of the late billionaire John D. MacArthur, was calling to tell Ajami, a political scientist at Johns Hopkins University, that he was one of 19 newly-named MacArthur prize fellows and would receive \$188,000 (£117,000) tax free over the next five years to use as he wanted. Ajami was incredulous. "I had heard of the foundation but I never thought I was under consideration," he said.

The foundation is the John D. and Catherine T. MacArthur Foundation in Chicago which, in the past five years, has catapulted to become one of the top five private philanthropies in America, with close to \$1 billion in assets.

Pundits have dubbed the programme the "genius grants". The aim is to identify persons of high promise and originality in many fields who may make what the foundation calls "significant contributions to society". Since May 1981, 80 fellows have been named and more than \$5m has been paid out.

The prize's intent is to relieve recipients of economic and professional pressures so their minds can roam widely. They are free to change fields or the basic direction of their careers. Prize fellows are not even required to file reports on how they spent the money. Norton Jay, a foundation official, said: "So far nobody's gone to the track and blown the money."

In these perilous times for foundations, MacArthur is one of the few places able to make such a grand gesture. The Ford, Rockefeller and Carnegie foundations are in the throes of organizational upheavals and declining endowments. Their sights are more on the bottom line than the

## The unexpected stroke of genius

cutting edge. The unusual, no-strings character of this programme has captured the public's attention and fancy; it is as singular and eccentric as the man it honours.

John D. MacArthur borrowed £2,500 (£1,600) in 1935 to acquire the financially-troubled Bankers Life and Casualty Company of Chicago. Bankers became his passport to a vast personal fortune. Through the use of pioneering mass mail-order techniques, he expanded Bankers Life assets past \$1 billion by 1977.

He ran his empire of 12 insurance companies, shopping centres, hotels, banks, radio and television stations and New York City office and apartment buildings from a booth in the coffee shop of a Palm Beach hotel. He owned the hotel, and lived upstairs with his wife in a modest apartment overlooking a parking lot. When he died in 1978, he was one of the three wealthiest men in America. MacArthur was clearly a twentieth-century original.

When MacArthur died, he purposefully left no guidelines on how the foundation should be run. He reportedly told a director: "I figured out how to make the money. You fellows will have to figure out how to spend it." This year, that directive translates into spending choices of over \$50m.

The prize fellows' programme was the first initiative undertaken by the foundation. In seeking a philanthropic identity, the board chose to fund exceptional individuals rather than support projects. The idea of gambling on creative people came from two researchers. Dr George Burch of Tulane University and Dr Leigh Van Valen of the University of Chicago. Burch felt that even one great discovery

would justify the cost of the entire programme. Van Valen lashed out at the corrupting character of the traditional grant process. There was, he wrote, an "incompatibility in practice between honest grant applications and conceptually original work."

The selection committee, headed by J. Roderick MacArthur, held its first meeting in September, 1980 and named the first 21 fellows the following May.

How does someone win a \$300,000 (£187,000) no-strings prize? Like equally famous but poorer Nobel laureates who collect \$190,000 (£118,000) the process is anonymous and confidential. Candidates' names are submitted by a group of roughly 100 nominators. The foundation will not reveal any more about them, except to note that nominators are drawn from a wide number of fields and normally serve a one-year term.

Kenneth Igoe, staff director of the programme, gave three reasons why a nominating procedure was chosen. The size of the prize made objective applications impossible; the foundation wanted the unsought character of a prize for tax purposes; and echoing Van Valen, "we wanted to avoid grantsmanship in all its pejorative connotations."

Once a person is nominated, a file is initiated. Personal data and references from experts in the nominee's field are gathered. The foundation tries to keep the entire process secret to preserve surprise. Igoe estimates that 85 per cent of the winners had no clue they had been nominated. As one winner commented: "It was as though an elephant fell on my head."

Possessing the right blend of talent, self-direction and future promise isn't

always enough to win. Timing is also crucial. The committee, according to Igoe, asks each candidate whether now is the right time to make such an award. The aim is clearly on finding people whose best work lies ahead but a premature award may overwhelm a recipient. The accent is on youth (38 fellows were under 40 when selected) since, as MacArthur says: "We'd like to find the person before he gets cooped."

For early religious scholar Elaine Pagels, the timing was right. "The grant came at a point in my career when the pressures were most intense. I was chairman of the department at Barnard, teaching full-time and raising a small infant. I don't know when I could get back to my research. It was amazing to be given a gift of time." She was on leave the past year and will teach only part-time at Princeton next year.

Since the programme is only two years old no reports are required, an evaluation is premature. So far, the programme is unique, a venture of some risk and a media darling.

However, a curious and overlooked pattern emerges from studying the credentials of the 80 current prize fellows. Of that number, 56 are university-affiliated. Such a number seems disproportionately high and out of character with the entrepreneurial spirit of the foundation's founder.

While the selection covers a wide spectrum of specialties and geographic areas, 32 fellows are clustered at seven universities: Princeton (seven), University of Chicago (five), University of California at Berkeley (five), Massachusetts Institute of Technology (five), Harvard (four), Stanford (three) and Columbia (three).

The 24 independent fellows include numerous writers and poets, two typographers, two journalists, a community activist, an eye surgeon working in the bush in Kenya, two filmmakers, a lawyer, a literary translator and two scientists at Bell Labs. Glaring by their omission in a prize devoted to creativity are any visual artists, any musician, playwright or dancer. And, although, lesbianism is countenanced, as are business people up to the mark?

MacArthur said of the programme back in 1981: "It is probably the best reflection of the rugged individualism exemplified by my father. He believed in risky betting on individual explorers while everybody else is playing it safe on another track." Judged by that standard, the programme seems on the same track as most of the Nobel awards, National Science grants and government contracts - locating creative endeavour inside ivy-covered walls.

The nomination process needs to be broadened to avoid the danger of peers promoting themselves. Hope exists that over half the 100 nominators come from the academic world. He says of preponderance results from the arts of tapping academic peers and writing recommendations steps critical to the selection process. It is hard, however, to believe that a foundation of Mides-like proportions should have trouble tapping other networks.

The next group of MacArthur fellows will be named next month. As the programme approaches the 100 mark, it will be instructive to study the backgrounds of the newest winners. It would be a shame if this programme, begun with the best of intent, and trumpeted as being daringly different, fell into the trap of being more of the same.

Tom Mullaney

Roy Wallis speculates on the role of the leader in new religious movements

## Charisma and machismo

Among the plethora of new religious movements which grew to prominence in the 1960s and 1970s, one could have expected some bizarre extremes to appear on statistical grounds alone. But statistical distribution does not take us far in our understanding of the behaviour of Charles Manson, Jim Jones, Chuck Dederich and Moses David Berg, nor of their respective followers. But I must not presume that these names resonate for everyone as they do for me. For some of my students, Charles Manson is already "early modern history".

Manson, viewed by some of his followers at least as Christ returned, was the instigator of a series of savage murders in California, including that of Sharon Tate in 1969. Jim Jones, founder of the People's Temple, led 900 of his flock into cyanide suicide in the jungles of Guyana in 1978. Chuck Dederich, once reformed alcoholic and founder of the Synanon religion, egged his followers on to attacks on neighbouring farmers and the attempted murder of critics and opponents, one of whom was severely bitten by an enraged rattlesnake left in his mail box with its rattles removed to give no hint of its lethal presence.

Violence was an element common to each of these movements, but they were extraordinary too in respect of their sexual practices. Manson initiated virtually all female members into the sexual lifestyle of his following, often first making love to them while both were on acid and instructing the girl to imagine he was her father. Thereafter, the family women were expected to be available for sexual contact at all times and with whomsoever Manson indicated.

Jim Jones engaged in sexual liaisons with many of his followers, both male and female and regardless of their marital status, boasting of them to his congregation. Chuck Dederich, more conventional in this respect, only took another wife after the death of his first wife Betty and instructed all loyal followers to do likewise. Divorcing their present spouses and remarrying partners sometimes suggested by friends and often of a different race. Male followers had enormous pressure placed upon them to secure vasectomies and pregnant women to obtain abortions.

Although violence has not at all been a feature of the Children of God (sometimes known as the Family of Love), its sexual practices have become notorious. "Moses" David Berg, the movement's now elderly founder early cast off his first wife for a new young follower, but he also entered into a multiplicity of sexual liaisons with other female followers. He encouraged his followers to abandon sexual monogamy, to enhance bonds of solidarity by sexual "sharing" widely among male and female members. In

exchange, lesbianism is countenanced, as are business people up to the mark? MacArthur said of the programme back in 1981: "It is probably the best reflection of the rugged individualism exemplified by my father. He believed in risky betting on individual explorers while everybody else is playing it safe on another track." Judged by that standard, the programme seems on the same track as most of the Nobel awards, National Science grants and government contracts - locating creative endeavour inside ivy-covered walls.

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The Family of Love is not alone in using sex as an aid to recruitment. Sexual access was denied to contacts of Manson's Family who were not committing themselves sufficiently. The girls were offered as topless "go-go" dancers to an entrepreneur at one fell into the trap of being more of the same.

The Children of God are a paradigm walking to secure bail for one of their companions. Like so much else in Manson's group, however, these activities were probably less systematically developed than their analogues in the Family of Love.

The Children of God are a paradigm

case of this pattern of arbitrary and unpredictable change. Founded in 1968 near Los Angeles, the movement originally seemed very similar to other Jesus People groups then emerging. Its followers lived communally and abandoned drugs and sex for a fundamentalistically informed life of evangelism and moral restraint. They saw themselves as a latter day tribe of Israel, modelling themselves to some extent on the kibbutz and planning to embark on *masse* to establish themselves in Israel and convert the Jews, thereby initiating the "last days" before Christ's return.

However, after a visit to Israel by the movement's leader and prophet Moses David Berg, who found it far too similar to America for his liking, the movement was to go through a succession of changes in belief and practice as a result of Moses David's revelations. Members were directed to leave America for Europe and later Asia, Africa, Latin America, subsequently sent off to new parts or back to their homelands, encouraged to settle and to adopt a mobile lifestyle camping or caravanning, in rapid succession.

They were urged to have nothing to do with other Christian groups, they encouraged to work with them; to separate themselves, then to join the churches; and so on in a bewildering fashion. Street witnessing gave way to literature distribution, which gave way in turn to "filthy fishing". Not working for the evil worldly "system" was superseded by encouragement to do so in order to support oneself or others in the field. "Spirit helpers" for the leader were introduced into his messages which also took on an increasingly explicit sexual character.

Effective leadership would be appointed and then cast down, only to be restored to power later. Structures of administration would be established only to be overturned. The organization of life was progressively transformed from large communes to small groups, often little more than nuclear families meeting each other only at intervals.

Having established that a pattern of arbitrary and unpredictable change appears in a number of new religious movements, the issue arises of how it can be accounted for. If these changes are arbitrary and unpredictable then it is, perhaps, perverse to regard them as possessing a pattern at all, since this precisely suggests non-arbitrariness and predictability. Moreover, the arbitrary and unpredictable seem - on the face of things - scarcely amenable to explanation as the expectable outcomes from some set of contingent characteristics.

The mad explanation, of course, is the madness of the leader. But the evidence for this is rarely based upon an adequate clinical examination. Moreover, such an explanation is less than altogether satisfactory - even in an apparently incontrovertible case such as that of Jim Jones toward the end - when part of the problem to be accounted for is why these particular "madmen" are able to lead other people to behave in such extraordinary ways. The solution to this is usually said to lie in the fact that the followers are "brainwashed" and that they are, therefore, willing to undertake any course of action, no matter how insane its advocate.

The "brainwashing" hypothesis, however, is one of the intellectually least compelling yet advanced to explain the behaviour of new religious believers. This is for reasons far too numerous to be elaborated here, beyond saying that the "victims" are volunteers; they are not incarcerated; many do leave at various points; the routine efficacy of any particular set of "brainwashing" practices has not been demonstrated even in coercive settings; anyway "brainwashing" never was anything more than a Cold War metaphor for conversion, attractive to those wishing to justify behaviour subsequently regretted.

However, I propose that when one shifts one's attention from trying to find a pattern in the changes taking place and in their overall direction, to seeing the pattern as lying in the very fabric of arbitrary and unpredictable change, that the problem can be resolved. This is not to say that the particular changes introduced at any

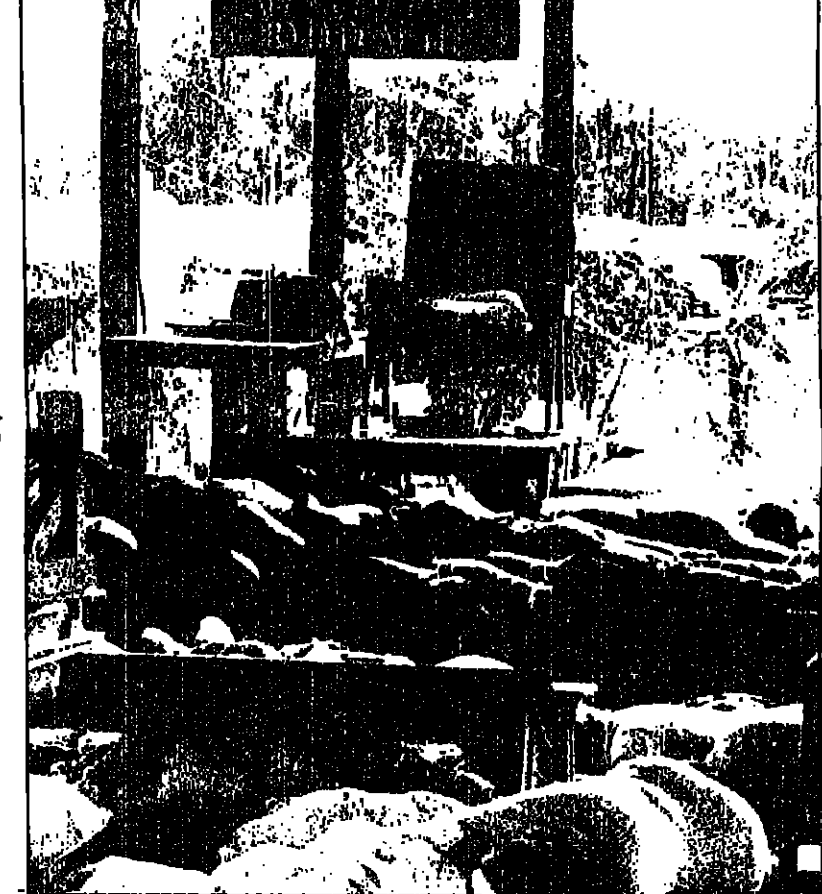
given point are not seen as important, nor that the direction in which they lead is not generally desired at that particular time by the leader concerned, but that change is also seen as vital regardless of its direction. Moreover, movements of this type have suffered the attenuation of those mechanisms which elsewhere constrain the fluctuation of, or at least the implementation of, the leader's passing whims.

What distinguishes the movements in question? They all display a character that I describe as world-rejecting. They all - from the first, or more progressively - distanced themselves sharply from the surrounding society, rejecting it as evil and corrupt, as doomed to decay and destruction, and saw themselves as islands of sanity or righteousness in a hostile and degenerate world. Even in their perverse fashion, Manson's Family saw themselves as living the ideal life compared to the "piggies" of the conventional world.

So great a break with the prevailing society can only be justified by the authority of someone perceived to be truly extraordinary. Thus such extremes of world rejection are normally founded or fostered by a charismatic leader. Weber's characterization of the charismatic leader is well known, applying the term to leaders whose authority rests upon the recognition in them by their followers of "supernatural, superhuman, or at least specifically exceptional powers or qualities... regarded as of divine origin or as exemplary...". Such authority is inevitably precarious, requiring continuing generation of belief in the extraordinary provenance of the leader's right to command, a belief only too liable to dissipate unless reinforced by signs of the miraculous.

But charismatic authority is not only precarious in terms of the liability of belief in its possession, but also in terms of the constant threat of institutionalization, the tendency for its transformation in a more rationalistic or traditionalistic direction. Charisma tends to give way to a less spontaneous and more predictable style of leadership and the emergence of a stable institutional structure which constrains not only the followers, but the leader as well.

Typically charismatic leaders acquiesce to, or are displaced from leadership by the process, but a few foresee the threat to their own free and untrammelled authority and take steps to forestall it. The principal means of doing so is the introduction of unpredictable changes and demands. These may take various forms - frequent change of environment, removing ties to stable external sources of support;



The "throne" of Jim Jones, founder of the People's Temple, stands empty after he led 900 of his flock into cyanide suicide in the Guyanese jungle.

undermining stable ties between pairs and groups within the movement, for example by breaking down exclusive sexual ties between members; undermining relationships of authority (other than those directly with the charismatic leader) which might compete for the loyalty of followers; introduction of new beliefs and practices which provide an opportunity for followers to display their commitment, or lack of it, to whatever issues from the leader's mouth, rather than any particular message or ritual.

Such changes not only enhance the leader's authority by removing competition, they also remove those whose commitment is declining and who would therefore, like to settle into a quiet and predictable pattern of activity providing other benefits of lifestyle, status or income. The "half-hearted" can be provoked into declaring themselves by constantly imposing new demands leading either to protest and exclusion for disloyalty, or to defection. Such periodic disruptions of routine produce among members who survive the change a sense of liberation, of new freedom, a sense of excitement and thus often of renewed enthusiasm and zeal, and, most important, of enhanced commitment to the leader.

Thus, I suggest that the degree of change characteristic of movements such as those described above is attributable to the successful efforts of their leaders to prevent the emergence of institutional structures, or routines of thought and behaviour which would endanger or inhibit their charisma. But change is also thereby indirectly encouraged because by implementing such changes, the leader eliminates the sources of inhibition upon his translation of every new whim or inspiration into practice.

The process thus tends to become self-reinforcing, leading towards and opening up ever darker recesses of the leader's mind, releasing ever deeper primal desires, as the constraints upon their indulgence are removed. Undermining institutional structures and patterns not only constitutes change and eliminates the constraints upon further change, it also creates ambiguities and conflicts of policy and practice which leave the members without clear guidelines to action. Only by constantly watching the leader, subordinating themselves totally to his inspiration of the moment and being willing to humble themselves for their failure to follow that inspiration closely enough, can they remain among the favoured. At that point, of course, obedience may lead into the abyss.

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# Why government should be governed

Geoffrey Finlayson argues that the price of freedom is eternal regulation

The year 1983 marks the one hundred and fiftieth anniversary of an event which, today, may seem of little significance: the Factory Act of 1833 and the first appointment of the factory inspectorate. Yet this seemingly obscure event was important, for it was the first occasion on which an attempt was made to enforce legislation curtailing hours worked in factories and, in a wider sense, it marked a stage in the growth of governmental regulation and professional bureaucracy in English social and economic life. Not this without relevance to the present day, for the issue of regulation and control within a society which prizes individual freedom and liberty are as pertinent to the Toyism of the 1980s as to the Whiggism of the 1830s.

Legislation regulating factory hours was not new in 1833. The first Factory Act was passed in 1802 and it was followed by several others. Although long working hours were by no means unknown in pre-industrial society, these acts – often inspired by humanitarian, paternalistic or evangelical concern – involved a recognition that the social consequences of industrialization could not go unchecked and that the more vulnerable sections of the workforce – in particular, children – required the protection of the legislature to guard against their exploitation by the more unscrupulous factory owners and rapacious parents.

But while the motives were laudable, the mechanics of the legislation to which they led suffered from severe limitations. It was one thing to put an act on the statute book but quite another to see that it was enforced. The absence of any system of registered births made age extremely difficult to establish and parents and employers – on whom enforcement procedures normally depended – had little motive to implement legislation from which they had little to gain and much to lose in terms of earnings and production.

This was, indeed, a point to which the Royal Commission set up by the Whig government in 1833 to investigate the employment of children in factories drew particular attention. "Any measures by which the enforcement of the law shall be made chiefly dependent on those who have an interest in breaking it", ran their report, "may be expected to prove as inefficient as the provisions of the existing law". To eliminate dependence on easily forged baptismal certificates to establish age, the commissioners recommended that a complex system should be adopted whereby a doctor should issue a certificate – countersigned by a magistrate – to the effect that a child was "of the full growth and usual condition of a child of the age prescribed by the legislature and fitted for employment in a manufactory". The age was nine years.

A child could not be employed in a factory without this certificate; and to ensure that he or she did not work beyond the hours laid down by the commissioners – nine a day or 58 a week for children between nine and 13 – the commissioners further recommended that three inspectors be appointed by the government "to go circuits of the chief manufacturing districts, at intervals short as may be practicable, and exercise the functions with which they may be invested for carrying the law into force". Here, then, was the germ of the factory inspectorate: unlike parents or employers, this was a disinterested and professional agency, with an interest only in enforcing the law.

The Act of 1833 somewhat widened the scope of the commissioners' recommendations. In addition to the protection of a nine hour day for children between nine and 13, it limited the hours of young persons between 13 and 18 to 12 a day or 69 a week. And, to enforce the act, it appointed four rather than three inspectors who were given powers of entry to mills or factories to which the act applied and wide powers of enforcement. A number of superintendents were also to be appointed to assist the inspectors, although they had considerably fewer powers.

Historians have differed in their interpretation of the forces which led to the Act of 1833. Some have argued that Benthamism was a vital ingredient and that the distinctive administrative devices derived from Edwin Chadwick, a prominent member of the commission, who in turn owed his ideas to Jeremy Bentham. Other historians have stressed other influences: the background of evangelical and paternalistic initiatives in factory legislation; the fact that inspectors and enforcing officers were not unknown in other fields; the point that an inspectorate was – as the commissioners themselves acknowledged – suggested by factory owners who, in the interests of fair competition, urged that implementation of legislation should not be left to individual conscience but should be enforced by compulsion.

This controversy extended beyond the Factory Act of 1833 and embraced the whole growth of government and administration of the early and mid nineteenth century: what Oliver MacDonagh called the "nineteenth century revolution in government". Broadly, it divided into those who stressed the primacy of Benthamite principle in shaping the emerging administrative state and those – like MacDonagh, who stressed the primacy of pragmatism. It was a debate which tended to run into problems of definition and, as often in historical controversies, was, on occasion, characterized by one school accusing the other of making points which the other promptly denied and disowned.

At the risk of oversimplification, it may be said that the report and Act of 1833 did owe much to Chadwick; but it was perhaps his distinctive ability to synthesize much existing thought and practice – not all of it deriving from Bentham – and to arrange it in an orderly and systematic fashion. This provided something close to a blueprint for the government of the day – although that government could, of course, alter it. Chadwick, indeed, occupies a prominent place among drafters of such blueprints of social policy who have displayed similar gifts of synthesis and organization.

Where historians agree is in their assessment of the importance of the Factory Act and Inspectorate in the growth of a professional bureaucracy. Not that the act worked well in its first years. There were to be problems over the method of certification as to the fitness of a child to work in a factory. The method adopted – following closely the recommendations of the commission – placed considerable reliance on doctors which, in the absence of a properly qualified and registered medical profession, was in many cases misplaced. The counter signature of the magistrate – often applied to a number of certificates at one without any sight of the child – provided little extra guarantee or safeguard. Certificates were often sold or passed on and employers turned a blind eye to such irregularities. The act gave jurisdiction to hear complaints against infractions of the law to magistrates, concurrent to that given to inspectors. But magistrates were not often employers and thus had an inducement to be lax in such matters.

Confronted with all these difficulties, the inspectors were faced with a very large task. Some had a huge area to cover and could make only very intermittent visits. Thus Robert Rickards, the inspector appointed to the Midlands, had an area which contained some 2,700 factories and 250,000 workers and he collapsed under the strain. Nevertheless, the very existence of the inspectors was a built-in guarantee that pressure would be exerted to close the loopholes in the act. Their statutory duty to report to the Home Secretary gave them a regular opportunity to press for further amendment and more extensive powers and the inspectors – in particular Leonard Horner – acted as a powerful stimulus to growth in regulation and administration. As Oliver MacDonagh pointed out, administration begets further administration: a lesson with which the twentieth century has become familiar.

What seems paradoxical in all this is the fact that the legislative intervention and administrative growth which the 1833 Act brought about took place at a time when the prevailing economic doctrine was one of non-intervention and *laissez-faire* and when administrative growth was regarded as undesirable, expensive and offering opportunities for patronage and corruption. This is, indeed, something of a paradox; one of which A. V. Dicey in his influential book *Law and Public Opinion* (1905) was aware. Dicey characterized the period 1825 to 1867 as one of individualism. Then the emphasis was on the dismantling of governmental controls; and yet the 1833 Act was, as Dicey recognized, an invasion of individual, and an assumption of governmental, responsibility. Later historians have also pointed to the contradiction and have used it to show the inconsistencies in Dicey's arguments – and even to argue that there was never such a thing as a period of *laissez-faire* in nineteenth century Britain.

Dicey was, however, entirely correct in pointing to the individualistic and *laissez-faire* ethos of the time; more correct than some of his later critics have been. The Royal Commission of 1833 was in essence an attempt to head off what would have been a much more substantial invasion of *laissez-faire* principles in the shape of a Ten Hour Bill introduced in 1833 – within the paternalistic tradition – by Lord Ashley, then at the beginning of a longer career in factory reform. The commission was an exercise in calculation rather than conscience; it was designed to give the Whig government an alternative – within the confines of *laissez-faire* – to Ashley's bill which, if passed, would have introduced a 10 hour day for all under the age of 18; and this restriction would have had the effect of limiting the hours worked by the adult workforce.

The commission's report went out of its way to condemn the Ten Hour Day: it was, it said, objectionable in principle, since it would involve an interference in the labour contract between master and man; it was objectionable in practice, since it would limit production and play into the hands of Britain's competitors, unfettered by regulation. The only section of the workforce which the commission thought it proper to regulate was children; such children were "not free agents" but were "let out to hire" and thus "a case was made out" for the intervention of the legislature on their behalf. This would protect them from the effects of overwork, which were spelled out in clinical and utilitarian terms: fatigue, disease, lack of opportunities for education and self-improvement – which the Commissioners sought to remedy by their recommendation that a part of the time abridged from labour should be spent in education. Further the commission kept the enforcement agency within strict limits. They realized that an extensive and numerous inspectorate would be more effective and efficient, but the report put it, "a comparatively small agency would suffice". It is true that the act extended the scope of the reform but it did not do so significantly. It was a great disappointment to the Ten Hours Movement, which, moreover, was quick to point out its ineffectiveness after 1833.

The Factory Commission and Act of 1833 thus argued within *laissez-faire* terms – that those who could, in theory, look after themselves should do so. The same point might be made with even greater force about the recommendations of the next great commission of the 1830s, that on the Poor Law, which reported in 1834. With its insistence that poor relief should only be given in well regulated workhouses and on terms which were less eligible than those offered by the lowest form of independent employment, the Poor Law report positively encouraged those who could look after themselves to do so and sought to clear the ground for the exercise of private charity. The reports of the two commissions – on factories and poor laws – were shot through with *laissez-faire* and self-help assumptions and, far from being early manifestations of Welfare State ideas, were representative of the individualistic, liberal, market-oriented ideology which was taking a firmer hold on official social policy in the 1830s.

And yet, in both cases, the state set up new agencies to create the conditions in which *laissez-faire* could flourish: the Factory Inspectorate of 1833 and the Poor Law Commission of 1834. Even within the context of *laissez-faire* assumptions – which Dicey correctly observed – regulation actually grew, which the commission thought it proper to regulate was children; such children were "not free agents" but were "let out to hire" and thus "a case was made out" for the intervention of the legislature on their behalf. This would protect them from the effects of overwork, which were spelled out in clinical and utilitarian terms: fatigue, disease, lack of opportunities for education and self-improvement – which the Commissioners sought to remedy by their recommendation that a part of the time abridged from labour should be spent in education. Further the commission kept the enforcement agency within strict limits. They realized that an extensive and numerous inspectorate would be more effective and efficient, but the report put it, "a comparatively small agency would suffice". It is true that the act extended the scope of the reform but it did not do so significantly. It was a great disappointment to the Ten Hours Movement, which, moreover, was quick to point out its ineffectiveness after 1833.

day developments are illuminating. It is a truism that the present government is more committed to market forces and self-help ideas than any in recent memory. Dorothy Wedderburn in an article in *The Listener* (November 4 1982) reviewing a talk by John Biffen, addressed herself to the points which Biffen had made about "the balance between the role of the state and the scope for private initiative". This, he had said, was the "crucial balance in modern industrial society" and while he had not sought to tilt the balance overwhelmingly to the side of private initiative, he had indicated the dangers, as he saw them, of the balance being struck on the side of the state. Dorothy Wedderburn commented that "someone of (Biffen's) political persuasion had to confront the paradox that, with his policies, government had to be used to reduce government."

In the case of the Factory Act, the Whigs used government to prevent more government in the shape of a 10 hour day. In the interests of ensuring fair and free competition within a market economy, they introduced the factory inspectors. Yet this was a body which, in time, was to be an ever more effective regulatory and controlling agent. In the Poor Law of 1834, the Whigs used government to cut public expenditure on poor relief; yet the Poor Law Commission, if negative in its objectives, was – in various guises – to play a rôle which was one of "drill-sergeant".

By tradition, the Whigs were upholders of freedom and individual liberty in political matters; and in economic and social matters they were, on the whole, free of the paternalistic strain which ran through some sections of the Tory Party. Yet to safeguard and promote freedom and individual liberty, they found it necessary to set up agencies which were, in practice, to control it. The problem was, in essence, an old one: freedom which is not licence requires regulation; yet regulation threatens freedom. Thus, as one historian has put it, state intervention in the mid-nineteenth century was not policy, but it was the growing reality. Politicians are usually explicit about the ends which they seek to put; they are sometimes less sure about the implications of the means whereby they employ. And yet, as means can be as important as ends and what is not policy can easily become reality.

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A view of children at work from *The Oracle of Health*, 1840. Right, a modern view of factory workers – hand filleters at work on the production line at Birds Eye



## BOOKS

### Central planning and the market

by Peter Abell

*The Political Economy of Socialism: a Marxist social theory*  
by Branko Horvat  
Martin Robertson, £25.00  
ISBN 0 85520 477 X

*The Economics of Feasible Socialism*  
by Alec Nove  
Allen & Unwin, £12.95 and £5.95  
ISBN 0 04 335048 8 and 335049 6

Nineteen-eighty-three, the centenary of Karl Marx's death, is perhaps a propitious time to assess the relevance of his ideas for the prospects of socialism in our own time. It would, however, be remarkable if a body of ideas so laboriously fashioned in the mid-decades of the nineteenth century and owing much to the philosophical legacy of both the Enlightenment and the Romantic reaction were to speak, in any significant detail, to our own time. Nevertheless, many appear willing to entertain Marxian doctrine and it does, of course, hold sway of some sort over the minds and actions of many millions.

Alec Nove directly addresses the issue of Marx's contemporary relevance, by "feasible socialism" he means a "state of affairs which could exist in some major part of the developed world within the lifetime of a child already conceived without our having to make or accept implausible or far-fetched assumptions about society, human beings and the economy". Branko Horvat, unlike Nove, offers us an avowedly Marxist analysis, the culmination of many years' engagement, both academically and practically, with the problems of the Yugoslav economy. Indeed, he opens by stating that his book represents a life's work; it is certainly written on the monumental scale and aims to provide a comprehensive blueprint for a socialist, self-governed democratic state.

Although both books cover much the same ground the difference in style and tone is quite striking. Nove always hesitates, cautiously tentative and only occasionally lightly ironic but always amusing, ultimately advocates a mixed economy comprising state-owned and controlled enterprises, self-managed state (or socially owned) enterprises, cooperatives and small-scale private enterprises. Horvat, on the other hand, Olympian, frequently heavily ironic and assertive, is impatiently dismissive of opposing views and entirely convinced that mankind's salvation is to be sought with an economy where the productive assets are many and the enterprises are self-managed. His prescriptions, in fact, to a large degree parallel the economic, though not political, institutions at present operating in Yugoslavia. Both authors, however, seek a rôle (optimal not exclusive) for markets in determining the volume of and price at which goods should be exchanged and will thus attract the wrath of those Marxists who interpret the masters' writ as providing the provenance for a centrally planned economy where the undisputed anarchy of the market will be displaced by "planning for need".

It is notorious that Marx himself – unlike the utopian socialists of whom he was so scathingly critical – was rather reluctant to provide anything like a blueprint for the socialist, let alone the full communist society. Those Marxists, therefore, for whom the problem is to construct a picture of these societies, faithful to Marx's intentions, find themselves searching for fragmentary evidence in a complex body of thought which fell from his pen over several decades. This fragmentary evidence is often contradictory and inconclusive and, as Nove argues, entirely inadequate for the purposes of moulding the contours of the socialist commonwealth. Although Marx was tolerably clear in his own mind as to what he meant by socialism, and that the former was a necessary precursor of the latter (see the *Gotha Programme*) he, nevertheless, gave us little more to work on than those famous aphorisms concerning distributions according to desert and to need. But, this is, not



Reconstructing the city of Skopje, Yugoslavia at the Institute of Urban Planning after the earthquake.

enough; and, all those who have had to tussle with the problems of "socialist construction", have found this to be so. Unfortunately, however, the empty spaces which lie between and beyond Marx's own conceptions of the just society have been papered over with high-sounding rhetoric – a rhetoric which, when in the hands of those in power and their intellectual lackeys, has had consequences which, to Marx himself, would have proved anathema. The rhetoric, nevertheless, derives from Marx's highest ideals, his heartfelt belief that technological development was (even when he was writing) well on the way to solving the "problem of production", if only the shackles imposed upon the forces of production by capitalism, could be removed. In the ensuing period of approaching abundance and selflessly motivated men the problems of economic allocation, the concentration of political and bureaucratic power (which after all are generated by unequal access to scarce economic resources), the calculation of opportunity costs and the provision of incentives would all begin to evaporate. Human beings would increasingly be able to see *ex ante* what needs to be produced and the correct way of producing it; exchange relations (ie markets) can then be replaced by conscious planning, satisfying needs through the provision of "use-values". Indeed, where the Bukharin, echoing Marx's suggestion that the social sciences are only required where the *true nature* of social relations are masked by ideologically tainted conceptions, have argued that there cannot be a political economy of socialism. Nove argues that a distinctive weakness of Marxist theory rests with its tendency to assume away many of the problems of socialist economic, political and social organization under the imprint of argumentation of this sort.

While both Horvat and Nove are far from hostile to the high ideals of the selfless post-scarcity communist society they are entirely sceptical about its likelihood in the foreseeable future and, what is more important, are not willing to buttress their arguments for socialism with conceptions which depend upon it. After all, Horvat's book is an essay in the political economy of socialism, not communism and Nove, as we have seen, has an eminently pragmatic definition of feasibility.

But this still leaves the problem of value under planned socialism. Can the labour theory of value provide central planners with an instrument for determining prices? Nove is sure it cannot – "Marx had little that was relevant to say about computation of costs under socialism (and implied that under full communism costs would not matter anyhow). Marxists who have tried to adopt his (labour) theory of value tend wrongly to use valuations in terms of (direct) labour costs alone, which so far as (direct) resource allocation is concerned is plainly inadequate as it ignores scarcity of production factors other than labour and neglects use value." This is, of course, well trodden

but controversial ground; Nove's argument is that even if (labour) costs could be computed, a complex modern economy cannot be planned centrally in an efficient manner. He persuasively rehearses the arguments which he and others have made elsewhere against the desirability of state command economies. Nove is a prominent Sovietologist and student of the East European economies and his detailed analyses of their experiences and even those of the reform models in Hungary, Yugoslavia, Poland and China, enable him to mount a convincing case against a sole reliance upon central planning in resource allocation. Here he finds much common ground with a number of socialist thinkers who advocate "socialist markets" (Lange, Brus, Sik).

Horvat reaches similar conclusions but by a rather more circuitous route. He promotes a model of self-governing socialism not solely on the basis of a critique of Soviet command economies (which he calls "étatism") and capitalism but in a positive way as a society embodying the precepts of socialist justice as he sees them. Horvat is equally critical about the "class structure" of both capitalism and étatist societies in each of which, he argues, a ruling stratum expropriates the "surplus value" of labour. Thus both are exploitative and will, according to further Marxian precepts, be replaced by genuine socialist societies. And, needless to say, these will be of a Horvatic (genuine Marxian?) self-governed variety. It takes Horvat five hundred pages of text and one hundred and forty pages of notes to dismiss capitalism and étatism and to describe the historical roots, philosophical underpinnings and the problems of transition to self-governing socialism, which give some idea of the complexity and richness of the author's undertaking. Indeed if the content of Horvat's book fails to satisfy many orthodox Marxists its length and weight certainly should not; not quite a *Das Kapital* but not far off. For those, however, who already feel timorous let me hasten to add that they will not encounter in Horvat's pages the infuriatingly opaque prose of much neo-Marxian writing.

So what are the precepts of (Horvatic) self-governing socialism? What principles of justice should social and economic organizations institutionalize in a democratic socialist society? True to the spirit of the Marxian dialectic, which would both preserve and extend the progressive content of bourgeois thought Horvat, having summarily disposed of Rawls' reverts to *liberté, égalité et fraternité*. He believes that these "three components of justice" are interrelated in a rather simple but convenient way; first maximum freedom and equality imply each other (thus if someone is less privileged than they are less free, and vice versa). Second, freedom and equality "make solidarity necessary". Conveniently then we face no dilemma, there is no

question of setting one against the other, all dimensions of justice move together either in the right or wrong direction. I doubt this (one paragraph) would withstand close logical scrutiny.

But, be this as it may, we are permitted to select one dimension only in deriving our principle of socialist justice as the others will necessarily fall into line. Thus *Omnes homines iure naturali aequales sunt* which becomes "members of society must enjoy equal freedom to lead life according to their own choices". Equality then is equated not with equality of outcome (or income) but with "socially equal life chances". Socialist society is, thus, first and foremost an "achievement society" but one where social promotion is such that one's social origins have no detectable influence on one's eventual social position. Horvat continues by discriminating the fundamental rôles which every citizen must occupy (fundamental rôles are those which cannot be abandoned unless a person leaves the society). There are, he argues, three such rôles, first as a producer, second as a consumer and third as a citizen, each of which must be subject to the principle of equality.

Equality of producers amounts to equal access for all to the productive capital of society – what Horvat terms social ownership. Self-managed producers' collectives are to be given the leasehold (*usufruct*) of productive capital which, while maintaining its value, they may use to their best advantage. The self-managed collectives are, however, not merely to operate in a competitive product market but are to *ex ante* voluntarily to coordinate their activities through a process of social planning. Social planning is to be sharply contrasted with central planning where coordination is imperative, undermining the autonomy of the collective. Social planning, it is ventured, will prevent the collectives from becoming the victims of the "haphazard forces of an uncontrolled market". Horvat believes that bourgeois economist and vulgar Marxist alike find common ground in representing planning and markets as two incompatible forms of organization. But social planning and the market are complementary; the former is to iron out the market imperfections (false perceptions, technological and other externalities, market fluctuations, and so on) and has three basic functions: forecasting, transcollective coordination of economic decisions and the guidance of economic development. Since it is voluntarily arrived at by participant collectives: the plan is obligatory for the collectives which adopted it. If a collective operating with the best information available does not see it as in its interests to collaborate then presumably it is free to go its own way.

Equality of consumers implies a "just" distribution of income. This does not, however, mean "mechanical equality" but rather that each should receive as much as he/she contributes to the social output. Since Horvat

allows (licensed by the concept of social property) an appropriate (collective) return to capital it appears that this principle is, in practice, almost identical to the neo-classical one which would promote returns in proportion to marginal products. This is not quite clear, however, since capital being socially provided can presumably be rewarded at a rate which does not necessarily reflect its scarcity-value ("contribution"). Vulgar(?) Marxists will cavil at all this; for after all unless one equalizes the conditions of production then, as Roemer has recently shown, it is possible – in a Marxist sense of the term – for one collective indirectly to exploit another. This aside, Horvat modifies the principle of distribution according to contribution to one according to need (Marx's full communism) for "education, the preservation of health and access to cultural activities". This he believes effectively guarantees equality of opportunity.

Equality of citizens (which can only be guaranteed when the first two equalities have been satisfied) implies an "equal distribution of power and meaningful participation in political decision making" while protecting the rights of minorities. This turns out to be pretty much like liberal-democracy with a much greater access to information.

From a purely economic standpoint Horvat advocates a sole reliance upon what for Nove is only one of a variety of economic organizations. Nove would, I suspect, be rather suspicious of Horvat's concept of social planning, feeling that the *ex ante* information, even for voluntary collaboration, would rarely be available. But Horvat seeks no compulsion – presumably social planning would only emerge to the degree that autonomous enterprises find it in their self-interest to use it. What Horvat seems to underestimate though is the drive for enterprises to collaborate in fixing monopoly prices. This tendency could in practice only be defeated by either reinforcing a genuine market or by some central institution with the requisite powers. So we are back to square one.

It is also arguable that Horvat's model of self-governing socialism is not the only one which is logically compatible with his basic precepts. By arbitrarily excluding the rôle of "investor" (for after all we are dealing with a money economy) from his list of "fundamental rôles" he is able to advocate uncritically a collectivized model of investment. But the phrase "socialized capital" could, it seems to me, be equally well interpreted, as implying equality of access to non-voting equity. Imagine, if you may, an economic system where non-voting equity (itself the only sort allowed legally) is equally distributed in the population and self-managed enterprises compete in a fully decentralized market for such funds. I do not find this incompatible with Horvat's philosophical precepts. Of course such a market may be "haphazard" but then why not some social planning of this market also? It appears that Horvat the radical Marxist is not as radical as he might be!

So what do these two intriguing books tell us about socialism and the relevance of Marxism in our own time? Much, in my own view. Both lead us to reassess realistically the rôle which markets may be permitted to play in a democratic socialist state. The socialist movement in Britain (despite its supposed greater reliance on Methodism rather than Marxism) has been dominated by the view that the socialization of capital (clause four and all that) implies nationalization. The argument for socialization is two-fold: first that it is more distributively just and, second, that it is more efficient in planning "for need". We can now begin to see nationalization may satisfy neither objective. Moreover, distributive justice can be addressed independently of the efficacy or otherwise of markets. Plan cum market is a technical issue of economic efficiency, the issue of distributive justice (income and wealth) can be addressed in other ways.

Peter Abell is professor of sociology at the University of Surrey.



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another programming language on a microcomputer, and he or she may begin to experiment with teaching through this machine. The best programming, however, will still be done with the help of professional programmers.

The country still lacks a major programme in using microcomputers in higher education along the lines of the mid-1970s National Development Programme in Computer-Assisted Learning or the present Microelectronics in Education Programme, which is aimed at schools. The cost of producing one hour of teaching via IT is still very high, even if equipment and programming costs are declining. Only through economies of scale, yet to be realized, can these costs be justified.

Microcomputers are now being used to control other IT devices for teaching in higher education. The Open University's Institute of Educational Technology, in collaboration with the Faculty of Technology and the BBC, is experimenting with interactive videodisc. Since a single videodisc can carry 54,000 frames of information, each one of which can be called up separately by the microcomputer, students can "branch" through the disc's teaching material, which may include moving or still pictures, text, diagrams and one or two sound tracks, while being able to use the microcomputer for other learning purposes, including carrying out certain kinds of computing. A prototype interactive videodisc may go into the Open University's summer schools next month. This development stems from work with interactive videotele and from this institute's surveys of recent American research.

Another recent IT application developed in the Open University with support from British Telecom is CYCLOPS, a remote "blackboard" for tutorials. Tutor and students, in several locations, are linked by telephone lines, over which they have voice contact, as in telephone conferencing. The lines also link screens for television. The tutor may wish to draw on his screen; what he draws appears on his students' screens and vice versa. He can ask one of them to add to his drawing, or to explain some aspect of it. Alternatively, he may ask his students to watch a short explanation, prepared beforehand and recorded on an ordinary audio tape-recorder. This

material, ranging from simple line-drawings to sophisticated animations, will appear on the screen, often with spoken commentary. Although CYCLOPS is being used for tutorials in the Nottingham area for the third year running, the Open University soon expects to see the system's capacities incorporated within a small microcomputer, possibly making it available to teachers and students throughout higher education.

Other national IT developments are proceeding without much impact on higher education. Cable networks laid principally for television are already being used by several American universities to reach local students in their own homes or study centres. In Britain, new cable systems may be in operation within two or three years, but higher education is grossly unprepared to take advantage of any opportunities offered by cable companies. Similarly, although the direct broadcast satellite is due to be launched in 1986, there are no signs that higher education will be able or ready to use this form of IT or its immediate successors, which are likely to be devoted entirely to entertainment.

To summarize, it is safe to say that IT is having a substantial impact on higher education in this country, even some impact on teaching and learning approaches. But we are only at the beginning. Some sceptics feel that a lot of money is being poured down this particular academic drain, and that IT for teaching must be proved cost-effective. They ask what IT can do that human teachers cannot, and whether IT can teach any better? Although these questions cannot yet be answered with confidence, we can be cautiously optimistic that over the next few years universities and polytechnics will exploit IT further and that we shall see many more projects advanced by academics with the aim of improving teaching and learning in higher education. In the meantime, teachers at all levels need to increase their understanding of IT, lest it exploit them.

## David Hawkrige

David Hawkrige is professor of applied educational sciences and director of the Institute of Educational Technology at the Open University. His latest book "New Information Technology in Education", was recently published by Croom Helm.

## A new generation of machines

As recently as last year, most educated people had still never heard of artificial intelligence (taking AI to be an abbreviation for a rather different enterprise). Today, one can hardly turn on the television without having an item on artificial intelligence beamed into one's sitting-room (though it is sometimes called "knowledge engineering" or "machine intelligence" instead). Sometimes the topic is the field as a whole; sometimes it is one aspect only, such as "expert" or "knowledge-based" systems, or educational "tutorials"; and sometimes it is its relevance to psychological and philosophical understanding of the human mind. In short, the first half of 1983 has probably seen more media coverage of AI than all previous years combined.

The "obvious" explanation for this state of affairs is false. The explosion of public interest does not reflect any radically new ideas in the field, nor any recent technological successes essential to the field. It is, rather, a story already being done in the 1970s. Why, then, has it occurred? What has made the invisible suddenly visible? In a fairy story, the answer might be "a magic potion". In reality, it is more likely to be "money, or the fear of losing it".

To be sure, 1982 was "Information Technology Year". Perhaps some producers and editors woke up each morning thinking "This is Information Technology Year! What can I do today to 'help' us all remember it?" - or, perhaps not. Then again, personal computers were widely advertised, and sales far outstripped the most optimistic forecasts. The newly available BBC

microcomputer even had its own television series, a dozen programmes on computer literacy which have already been repeated. And newspapers are full of "personal computing" magazines. But personal micros are (as yet) predominantly used for playing games. News-items about teenage wild-kids striking it rich by programming new sorts of space invaders have nothing to do with AI, which is concerned with a specific class of computer program: those carrying out tasks requiring complex and varied internal descriptions of situations, and powerful planning and reasoning abilities.

Many such "tasks" are normally marked out by us as "intelligent": playing chess, doing mental arithmetic, planning scientific experiments, diagnosing diseases, and the like. But some are not typically termed "intelligent" for we can all perform them effortlessly - indeed, they are not normally (if ever) open to conscious inspection or control. These capacities, many of which we share with the higher animals, include: recognizing the three-dimensional shape of half-hidden objects; seeing when obscured by a stranger is friendly rather than hostile; using natural language to hold a conversation, or to tell or listen to a story; placing a fragile bottle in the empty space on a cluttered table; and so on. Despite the attention paid by psychologists to vision, language, and motor action, it took AI to show us that highly complex and varied internal descriptions and inference processes must be used in these activities too, whether we are conscious of them or not.

The prime factor causing the sudden upsurge of public interest in AI in Britain (and in the United States) was the announcement of Japan's "Fifth Generation Computer Project", a ten-year national plan for the 1980s, jointly funded by Japanese government and industry to the tune of £540,000,000. Japan defines the first four "generations" in hardware terms: machines based on valves, on transistors, on silicon chips, and on Very Large Scale Integration (VLSI). The predicted fifth generation, as well as having improved hardware, is defined in terms of an additional ingredient: intelligence. Artificial intelligence, then, is central to this Japanese initiative. Its ambition is to develop large parallel-processing machines and intelligent software, enabling computers of the 1990s to understand Japanese and other natural languages, to interpret the speech of many different individuals, to act as intelligent assistants in a wide variety of tasks, and to provide advanced problem-solving and sensor-motor abilities for mobile domestic and industrial robots.

To plan is not necessarily to perform, and there is no certainty that the Japanese project will succeed - especially if the timescale is taken literally. Although each of the tasks mentioned above can already be achieved to some extent by AI-programs, all these programs are limited to a very narrow domain. Once having accepted (perhaps with some initial surprise) that quasi-intelligent performance can already be coaxed from a computer, most people underestimate the difficulties involved. This is especially true of the apparently simple tasks which all of us do every day, and for which no special expertise or training is needed: many of these are stubbornly resistant to current AI techniques. Indeed, one of the prime intellectual lessons of AI is the previously unrecognized richness and subtlety of human "common sense".

By contrast, it is possible to program a useful level of specialist expertise, at least for circumscribed problems where relatively simple forms of reasoning suffice. Programs called "expert systems" are already commercially available, some are being used experimentally in institutions (such as hospitals), and many more are being developed. Some assist with consultant advice in problem-areas such as medical diagnosis and prescription, genetic engineering, chemical analysis, and geological prospecting for minerals and oil.

To make evaluation easier, expert systems can display the chain of reasoning behind their advice. The programmer builds into them as much as possible of the theoretical knowledge and "rules of thumb" of the experienced expert, and can improve them by adding new information. But beyond a certain level of complexity, adding more information to existing systems can make it difficult to control the interactions between rules. In general, the scope of current expert systems is severely limited, and much further research is needed. A fundamentally new approach will be needed to make a significant advance in their reasoning power. Even so, a few already give more reliable advice than all but the very best human experts, and one or two surpass us all.

Even if the Japanese achieve only a limited degree of success, their economy - and ours - will be deeply affected. Having no raw materials, and a limited agricultural base, they are gambling on making themselves the world-masters of information technology. To this end, they are deliberately increasing the power of AI - and the research results and consultant advice of first-rate workers from Britain and the United States. Unless we do likewise, we shall be disastrously overtaken in the economic race.

The notorious Lighthill report in the early 1970s did grave damage to British AI (leading to the emigration to the United States of some of our best young researchers). Were it not for the Japanese influence might yet prevail in the corridors of power. But the current Government, advised for instance by the Alvey Committee on information technology, has recently

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become aware of some of the economic dangers and opportunities. Despite its record of savage university cuts, it has already done something about the educational implications.

Out of a governmental budget of £200,000,000 for supporting advances in information technology, most (£150,000,000) will be devoted to research and development in industry. These projects (many of which use AI-techniques) will be financed equally by industry, thus bringing the national total to about £350,000,000. The remaining £50,000,000 has been set aside for academic institutions, for faculty salaries and student grants. Seventy new university posts in information technology have been founded this year (to start in the autumn), and about 30 more are planned for next year. Of the 70 immediate posts, 30 are for "new blood" appointments, and 40 are for MSc conversion courses.

Within this new backing for higher education relevant to information technology in general, something has been done for AI in particular. A few of the 70 new posts have been assigned for courses in AI, including MSc conversion courses focussed on knowledge-based systems. The Alvey committee's advice has been diluted: it recommended that education in AI - relevant especially to knowledge-based systems, logic programming, the man-machine interface, and robotics - should receive significant support, but the proportion of educational funds earmarked for AI is less than what might have been expected. Gift-horses, of course, should not be looked in the mouth - especially since they are almost an extinct species within higher education today. But one might wish that these welcome animals had been given rather more teeth. For all that, information technology is the one clear growth area in higher education, and AI in British universities has been given a boost.

In consequence, the few departments offering AI at undergraduate or graduate level will grow in size - and possibly in number. The four main institutions now providing such training are Edinburgh, Imperial College, Essex and Sussex. Several other universities (including Cambridge, Exeter and Warwick) already offer undergraduate and/or postgraduate courses based on AI to computer scientists and psychology students, and the number of such courses will probably increase. At Edinburgh, AI is available as an option for students taking degrees in various other subjects (including psychology and computer science), and the postgraduate programme in epistemology relates AI to psychology, logic and linguistics. The Edinburgh AI-group has a firm computer science base, and there are strong links with robotics research in the university. At Imperial College there is an emphasis on logic programming and expert systems within the computer science department, and some of the faculty act as consultants in this area to the Japanese. Essex runs an interdisciplinary graduate programme in cognitive science which includes AI; it has a bias towards natural language understanding and machine translation.

At Sussex, AI is taught to undergraduates and graduates within the cognitive studies programme, which integrates it with psychology, philosophy and linguistics: undergraduates "major" in one of these, and take two others as well (including AI, if it is not their major). An MSc conversion course in knowledge-based systems is to start this autumn. Artificial intelligence is also taught at Sussex in experimental psychology, in the logic major, and in the school of engineering and applied sciences.

Students of AI learn about the potential for its application, in such areas as expert knowledge-based systems, natural language processing, "friendly" man-machine interfaces, robotics, or logic programming. Given the increasing public and industrial interest in AI, attention should be given to the broader social implications of these technologies. This attention should not come only from specialists in the field. Academics in other areas (such as law, history and the social sciences) should learn about AI and

study its social implications. If they do, the content of higher education will be correspondingly affected.

Modes of learning in higher education will also be slowly affected. The few existing undergraduate tutorial programmes - in logic, for example - which are written in AI-programming languages (such as POP-11 and PROLOG) do not incorporate powerful AI techniques. But much research is being devoted to "intelligent tutors" based on these techniques. Such programs are not "drill and practice" devices, or branched teaching machines like the Skinnerian variety. They will be able to respond more flexibly, running interactively so as to ask and answer questions about the difficulties that may underlie the student's performance.

However, these ambitious AI-based tutorial programs will not be useful in higher education (or in schools) for a long time yet. In addition to precise representations of the specific content-area, such programs will need a model of the student's knowledge and thought processes. The good human teacher uses such a model intuitively, in choosing the level at which to pose a question or in deciding what hint may be a helpful clue. Specifying how the teacher builds up such intuitive knowledge in a complete and precise form will be no trivial matter. This is not to deny, however, that less ambitious programs will increasingly be used as tutorial aids in universities.

Teacher-training is not directly affected by the recent surge of government funding, but it is already recognized that it should include reference to uses of computers in school which are based in AI. At present, not only are most teachers unfamiliar with computers and their possible educational uses, but most of those who do have some familiarity with them have little or no idea of their real potential. Even students with A-level computer science may require remedial teaching when they get to university, to undo the harm done by their concentration on programming languages (such as BASIC, PASCAL, or FORTRAN) which are unsuitable for AI purposes. It is virtually impossible to develop "intelligent" programs in languages like these (though once developed, they could in principle be written in any language). So A-level students, and many current users of personal microcomputers, may believe that flexible quasi-intelligent information-processing is impossible for computers.

In their discussion of *The Future with Microelectronics*, Ian Barron and Ray Carnow (Open University Press, 1979) pointed out that, as well as vocational training and adult training, we shall need contextual education to ensure that everyone is aware of the technology and its possible consequences. As more non-experts become users, there will be an increasingly urgent need for relevant non-specialist courses in higher education. They conclude that "It should perhaps be a target that every graduate has the capability to use computer systems and a thorough understanding of their potential."

One cannot but agree. And to "potential" here one must add "limitations" - for (like human beings) AI-programs are not fool-proof systems guaranteed to reach the right answer, nor is their reasoning "objective" in an absolute sense. Intelligence includes being able to make sensible decisions without having all the evidence in. One can do this only on the basis of one's expectations or previous knowledge - which will sometimes prove inadequate. In principle, the conclusions of a computer program are open to challenge just as a person's are.

These points must be brought home to the general public, if they are to be able to take advantage of this new technology rather than being exploited by it. For most people, the ability to write usable programs will be less important than the ability to use - and to avoid misusing - programs written by others. This sort of computer literacy can be fostered by ideas drawn from AI, used so as to convey a deeper understanding of the potential and limitations of programs. Several universities are already running courses with these aims in mind.

For instance, at Sussex we have found that students in their first days of

range of first-year students in the arts and social sciences. Students have access to a "library" of specially designed programs in various domains, which they manipulate or use as sub-routines in their own programs. If they later decide to take a course in AI, they will learn how to implement such programs themselves. But if they do not, the experience of this teaching environment in which they can fairly easily explore variations and extensions of interesting programs tends to improve their motivation for learning in general.

I have said nothing about the intrinsic interest of AI, for it is the technological and economic implications which have led to the recent change in public awareness and governmental support. But it is an intellectually exciting field. Considered as a branch of computer science, it offers a challenge to our understanding of different types of computational processes and representations. Considered with respect to the human sciences in general, it has already affected the content and methodology of these disciplines. Collaborative research in the general area of "cognitive science" is growing, and several universities offering interdisciplinary courses within which AI is an integral element were mentioned above. Eventually, courses in AI may be routinely offered as an integral part of degrees in psychology, philosophy,

or linguistics. Some readers may shudder: is not psychology reductionist enough? But - AI is not reductionist, as behaviourism was for example, and it has already made "mind" theoretically respectable again. Because its central concern is the internal processes concerned with the representation of knowledge (or belief), AI encourages a constructive view of intelligence, and an "image of man" that is humanist rather than mechanist. This fact could, in principle, have a significant effect in areas of higher education far removed from expert systems and robots.

Artificial intelligence has clearly begun to influence higher education and will continue to do so. The obvious sense in which this is so concerns training and research in AI as such, including studies of various industrial and commercial applications. Less obvious is its effect on the human sciences in general, where it has provided a new appreciation of the problems of explaining human abilities, and contributed to a resurgence of interest in the mind and mental processes.

## Margaret Boden

Margaret Boden is professor of philosophy and psychology at the University of Sussex, and author of "Artificial Intelligence and Natural Man" (Harvester Press, 1977).

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# INFORMATION TECHNOLOGY

## Instilling a sense of direction

"Why did I come here?" These words were engraved among the doodlings of generations of students on a desk in the lecture theatre. A response to a boring lecture or an over-tiring exam? Or was some poor student experiencing the dawning of disillusionment — that this was not what he or she wanted to do with their life.

It is sad to reflect that some students, even if only a minority, may not enter higher education as a result of mature consideration of how it fits in with their personal development and/or career aspirations. The sub-culture of the later years of school can occasionally generate its own momentum so that, as one student put it, "It was just assumed that you would go on to university."

What one does then and how this relates to any longer-term personal objectives can then become secondary considerations. The result for some may be the doodling on the desk. Rational choice of a higher education career has two prerequisites. The first is self-assessment. Students should have a realistic awareness of their own strengths and weaknesses, interests and aspirations. The second is knowledge of the career opportunities potentially available to them. They should choose on the basis of knowledge, not ignorance of the possibilities. Helping students to get to grips with these issues is the function of the careers education programmes which schools are now evolving, and to which computer technology is beginning to make a significant contribution.

There can hardly have been a time when good careers education was more badly needed. The transition from school, through higher education, to work has never been more difficult. The penalties for those who are ill-prepared for that transition have seldom been more severe. In times when job opportunities were plentiful, young people could afford to make initial mistakes. Today, with youth unemployment forecast to reach levels of 70 per cent or more this year, and even graduate unemployment beginning to show a significant increase, the luxury of a second chance is becoming a rare privilege.

In these circumstances, careers education is clearly important. It is unkind to allow young people to flit through school in ignorance of the employment opportunities and problems that lie ahead of them, leaving them to discover for themselves the frustration and disappointment of lost opportunities. It is also unnecessary. Even if we cannot immediately create the jobs that students need, we can at least make them aware of the difficulties they may have to face. We can prepare them to make the most of the opportunities available, and we can help them to retain a sense of direction and purpose which may encourage their morale and maintain their self-respect. The provision of this kind of help must be a major objective of careers education programmes if they are to be relevant to the needs of today's students.

The Jobs Ideas and Information Generator — Computer Assisted Learning (JIIG-CAL) project is an attempt to address these issues by harnessing computer technology to the provision of careers education and guidance. JIIG-CAL differs from other computer developments in this field in that it is the only system of its kind in Britain which has been specifically designed to act as a comprehensive resource to support careers education programmes in schools. It is a joint development by the Department of Business Studies, Edinburgh University, and the Educational Computer Centre, London Borough of Havering, and is based on extensive research and development at these two centres.

The system aims to provide both pupils and those who advise them with ideas in the form of suggestions about jobs which can be explored as possible careers, and to supply information about each job selected. Through the experience of thinking their way through the questions it poses, JIIG-

CAL also provides a valuable exercise in self-assessment and considerably improves pupils' knowledge and awareness of jobs.

Beginning in the fourth year (Scottish S5), pupils learn to use the system in a series of classroom lessons. This is a two-stage process, the first part involving an assessment of the pupil's interests using a carefully researched psychometric questionnaire called the Occupational Interests Guide. The Guide helps pupils to sort out the broad areas of work (or job families) in which they are most interested. In the second stage they complete a questionnaire providing the system with further information about school subject preferences, and their likes and dislikes for a number of factors related to jobs — such as place of work, physical conditions, hours, training, study, and so on. A special illustration booklet is used at this stage, with cartoons which provide a clear and amusing illustration of each job factor and help to hold the pupil's interest.

All of this information is matched by the computer programs against information on over 500 jobs stored in the JIIG-CAL job-file. A full range of careers is represented from unskilled and semi-skilled jobs, through to professional and managerial ones, so that the system can be used by pupils of all levels of ability. The information about each job is carefully researched and regularly updated by the Edinburgh team.

The system compares each job with the information supplied by the pupil, grades the jobs for suitability and selects the 20 most suitable jobs to be printed as suggestions for consideration. Although the logic on which the matching algorithm is based is too complex to explain here, it is on the concept of the "best balance" of likes over dislikes that the JIIG-CAL matching algorithm is based (see figure one). The system does not "accept" or "reject" jobs. Instead it weighs up the "pros and cons" of each job and gives it a points rating. This will be close to one if the balance is largely on the negative side, and close to nine if it is largely on the positive side. The jobs are then

sorted so that those with the highest points ratings go to the top of the list and the top 20 jobs are then printed. Thus each pupil gets the 20 most suitable jobs from the job-file.

When these job suggestions are being printed, different print formats may be used. "Normal" print, which is most commonly used, is designed to give the pupils just enough information to decide whether or not they wish to explore that job any further. If they do, they can request a "maxi" print which is much more detailed and contains virtually all of the information held by the system about that job.

The job information contained in these printouts must represent a "national picture", since the system is now in use from Inverness down to Devon. However, facilities are also provided which enable careers services to insert information about jobs in their local areas. This can cover not only the potential availability of each job within the area, but also the specific employment, education and training opportunities offered by local employers, colleges of further and higher education, and so on.

JIIG-CAL is not designed to replace conventional careers talks about opportunities in various industries, the armed forces, and the like. What it can do, however, is to select from general careers information of this kind, that which is personally relevant to each pupil. Indeed for some pupils, their JIIG-CAL printout is one of the few experiences of school in which they have received something directly relevant to themselves, rather than as just one of a class. All printouts are in plain English, and pupils keep their own copies so that they can take them home and discuss them with their parents and friends. Hence individual motivation can also lead to a wider family involvement.

JIIG-CAL is now running in 40 installations throughout the UK, and is used by about 50,000 pupils annually, and interest in the system continues to grow steadily. For those who will enter higher education, it provides a framework for realistic self-assessment and helps with the formulation of sensible long-term career plans. Hopefully it will contribute to reducing the number of students who merely drift into courses without sufficient forethought.

For those who are completing their higher education studies and entering

continued on facing page

## SPROG SAYS

The job with

EVERYTHING YOU LIKE

and

NOTHING YOU DISLIKE

— DOESN'T EXIST!

Every job has a MIXTURE

LIKE

of the things you would

NOT MIND

DISLIKE

What matters is the BALANCE of

LIKES

over DISLIKES

The BEST you can expect

is to find a job with MORE of the things you LIKE

Figure one: a summary of the essential features of the logic on which the matching algorithm (pupil to job) is based.

# INFORMATION TECHNOLOGY

continued from facing page

the world of work JIIG-CAL also has a lot to offer. It has now been used experimentally with a small group of second-year and third-year undergraduates, and is currently being evaluated, together with some similar systems, for possible use in the careers guidance of mature students and of adults outside the higher education sector. The results so far are encouraging and suggest that, with relatively few modifications, the project could provide a useful resource for a wider range of students than the school population with whom it is mainly used at present.

## Facilities for computer education

Mid-Kent College of Higher and Further Education is exceptionally well-equipped in the area of computer education. The college, through its ten teaching departments, runs an extensive range of courses in many different disciplines. Currently about 10,000 students are taking full-time part-time and sandwich courses, ranging from craft to postgraduate level. This, coupled with the fact that the college has five geographically-separate teaching centres, posed a considerable challenge in providing appropriate facilities for teaching in the all-pervading field of computer education. I propose here to outline the ways in which these problems have been tackled.

The college now has a purpose-built computing centre housing a main-frame computer, and several micro-computer laboratories with plans for a further one. Additionally, each department has a number of individual microcomputers for their exclusive use so that, in all, the college currently possesses nearly 150 microcomputers. The college runs courses in computer studies up to HND and TEC/BEC certificate level and also provides computer education as a component of courses in, for example, science, building, management, engineering and business studies. A wide range of short courses in different aspects of computing is also run regularly for the general public, together with tailor-made courses for local firms.

The computing centre contains an ICL2904 main-frame digital computing system with a full range of peripheral equipment, and 20 microcomputers (five each of Research Machine 380Z and 480Z plus ten BBC). Besides serving the needs of the college, the centre also acts as a resource for all the schools in Kent and the other colleges in the county. Additionally, the regional coordinator for the southern region of the government-sponsored Microelectronics in Education Programme (MEP), aimed at introducing microcomputers into schools, is based at the centre. The centre has been running, since 1969, a variety of computing courses for teachers. Additional services to schools include the batch-processing of programmes on the main-frame computer, lectures and demonstrations to school parties, and advice on the selection and use of hardware. The centre also operates a software library, shortly due to become the regional library under the MEP, which currently contains about 300 programs, mainly for use in computer-aided teaching. The centre also runs a computer-based careers information service on behalf of the Education Committee of the Kent County Council.

In the microcomputer laboratories, our aim has been to have a maximum of two students to one microcomputer, the ideal ratio being one-to-one. The seven existing microcomputer laboratories were equipped with different systems to provide a wide range of facilities and to reflect the specialist needs of the individual departments.

The Chatham centre of the college has four microcomputer laboratories. One is equipped with 18 systems based around the North Star Horizon instrument and is mainly used for teaching computer programming. Each Horizon system is linked to an ELBIT video display unit, and each pair of systems shares a switchable printer. Five of the systems are equipped with

high-resolution graphical facilities while one system has a low-resolution colour graphics display of the kind used in teletext.

A second laboratory contains 18 North Star Advantage microcomputers and is used for a variety of courses. As the Advantage is "user-friendly", it is easier for students to start off on this equipment and progress to the Horizon. Among other educational activities, the graphics capability of the Advantage is used to run a graphic design module for students taking the DATEC course at the local college of design, a similar course also being run at another centre of Mid-Kent College.

A third laboratory, for calculations, contains 16 Commodore PET micro-computer systems, a Commodore 8000 Business system, a Hewlett-Packard 30 computer, an IJ high-resolution graphics system, and ICL Gammatrol interface equipment. These facilities are mainly used by students of science, engineering, and business studies.

A fourth laboratory at the Chatham centre, equipped with 12 Tandy machines, is housed in the management block to deal with, for example, the postgraduate Diploma in Management Studies, the Institute of Industrial Managers course, and the Institute of Cost and Management course.

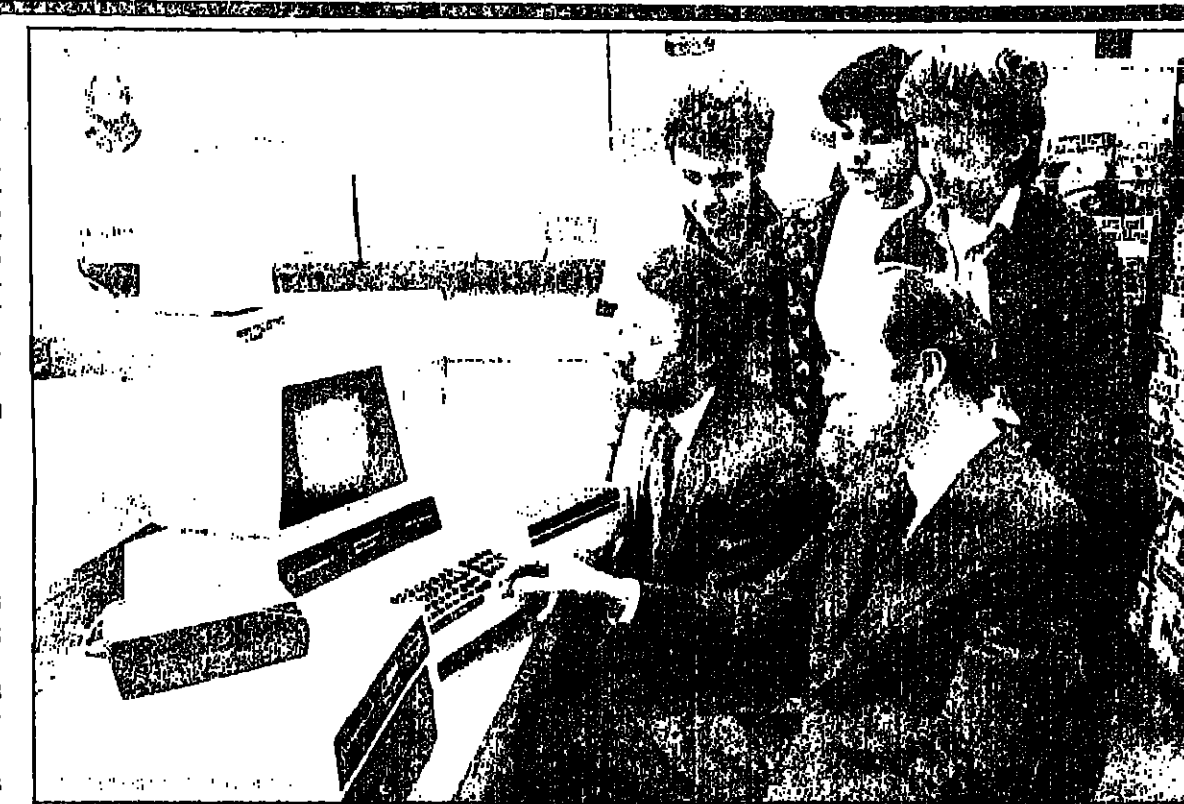
At the Rochester centre of the college, a laboratory fitted with 12 Advantage machines is used on a variety of courses. The Maidstone centre has two microcomputer laboratories, one containing 12 Advantage microcomputers, the other 16 Tandy machines, all of which are used for business studies courses, including the computer studies option of the BEC National Diploma.

Individual departments also have a number of microcomputers which are used for teaching activities inappropriate for the laboratories. The science department's ZX81 and two Commodore PETs are used, for example, with a high-resolution graphics facility to study spectroscopic information and to demonstrate concepts such as the phase rule. Land surveying students use a Commodore PET, for example, to analyse data from an automatic electronic distance measuring instrument. Civil engineering students are given "hands-on" experience of a fully-automatic system, based on the Commodore PET, for the physical testing of soils; and computer techniques are also used in the same department for structural analysis and testing. Research in science and other fields is aided by a computer-based information-retrieval system linked to various data bases throughout the world. Production engineering students use computers for the control of machine tools and for the study of computer-aided design and manufacture. Microelectronics laboratories have also been specially equipped for electrical engineering students to study the microprocessor (the electronic "heart" of the microcomputer) and its applications to the control of industrial plant and other processes.

These are just some of the ways in which computer education is being realized throughout the college.

C. M. Fletcher

C. M. Fletcher is Director of the Business Advisory Centre, Mid-Kent College of Higher and Further Education.



Discussing a computing problem at Mid-Kent College of Higher and Further Education.

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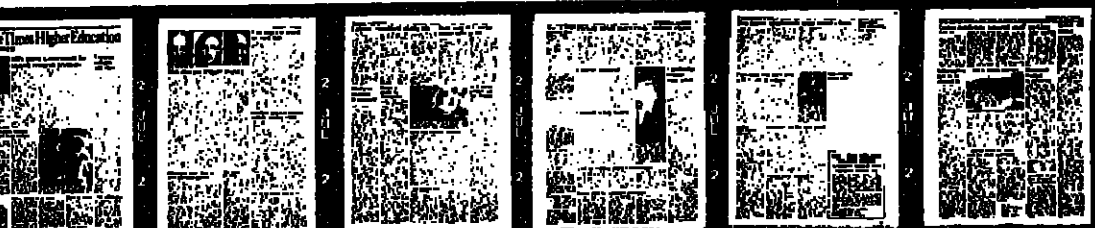
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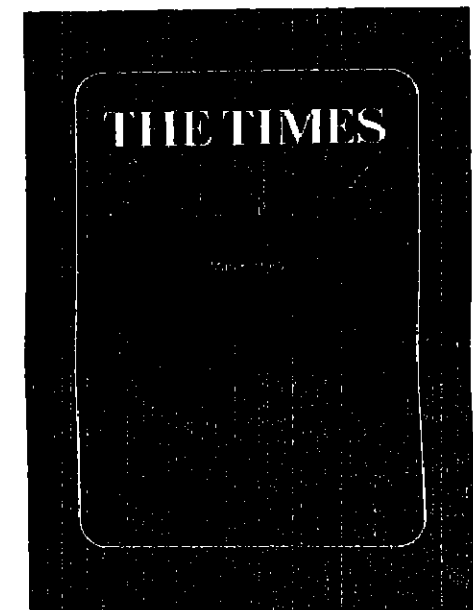
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## INFORMATION TECHNOLOGY

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implemented and operated by the intended users. The Leicester software greatly eases such changes. This flexible and responsive design has led, at Unilever, to a satisfying climate of interest and has galvanised the research developments in this area. Work is continuing in order to develop these facilities into a complex software environment for user interface construction. The ability to respond rapidly to 'design changes concerning the interface will remain a central requirement. We are just as much concerned with appropriate software as with powerful software.

In a much less esoteric, but just as problematic, environment the same approach is being applied to the design of simpler systems, including a simple word processor that is not powerful but is appropriate to the users. An investigation has been underway for some years into the use of computers in a school environment, particularly to help in English language teaching. We see today a very rapid growth in the provision of computers to schools and of support, in part through the national Microelectronics in Education Programme. The most striking thing about these developments is that we actually know very little about the usefulness of computers in schools. The Leicester project, which is supported by the L.E.A., is attempting to investigate this issue in one area. As many of the important factors of student/teacher/support material/computer relationships are not specific to English teaching, the results might be expected to be of interest on a broader front.

As in all of the work of the Leicester research group, a team effort incorporating different disciplines is used. In this case the work is organized by Linda Candy, head of English in an upper school, but strongly supported by expertise in human-computer interaction, software and psychology. The software design philosophy is the same as for the work at Unilever, but here a more elaborate structure of observation and monitoring is called for. Very often the interesting and perhaps the most valuable things that result from using computers do not seem to be intimately connected to the machines themselves. That is to say, it is the effects on human behaviour that at times is most significant. It is noticeable, for example, that a 14-year-old student, with a reading age rather below 10 years and with particular related problems with spelling and writing has made rewarding use of the word processor that forms part of the integrated software system used. Having written a 200 word draft of a tall story that he had been asked to produce, he chose to work with it on the computer. The draft was full of errors and he refined and improved it for a while, but then became interested in a new possibility that occurred to him. He created a new tall story (in which he himself figured) which he directly input into the machine and refined it using the word processor. He consulted with his teacher and a dictionary (itself an important act) about spelling and punctuation until he was satisfied. The story, of course, was much longer than the original one. It was not required of him — he did the work following the experience of using the word processor. He became engaged, completed his task and finally took a printout of the story home to show his parents. The factors that affect this sort of engagement and response are vital, not just for children, but for all non-expert users.

Another project, led by Dr Derek Teather and in collaboration with Professor George du Boulay of the National Hospital for Nervous Disorders, has developed procedures to aid doctors in the differential diagnosis of cerebral disease. The computer system has had knowledge and expert opinion built into it, as in the case of the Unilever work. It helps the radiologist to interpret computerized tomographic scans. Currently, work funded by International General Electric is using the results of the earlier work to produce an online diagnostic and teaching aid for radiologists. A substantial element of this project is concerned with ensuring that the user interface is correct, that is, that the



A secondary-school student, discussing his reactions to using a computer in his English lessons, with Professor Edmonds.

system is useful in practice. Again, this will involve trials with radiologists using possible systems that have been prototyped or simulated, so that the reactions to a real system can be assessed. Further funding for this important project is to be provided by the Department of Health and Social Services.

As mentioned above, when considering human needs in relation to computer systems, we find that certain basic capabilities are required but not readily available. One very significant such capability is that of being able to show things to computers, that is, computer vision. The Leicester group is investigating methods for 'discussing' images with computers and consequently achieving this capability. Part of this work involves giving the computer the best possibility of extracting information from images automatically. The discussion can thus be at a reasonably high level. Several projects, led by Dr Abdullah Hashim, are working on this problem. The projects are mostly aimed at real applications, often trying to solve problems in an industrial environment. A large library of known image processing routines has been developed to assess the viability of a project and guide the researcher towards the best approach to a solution.

Leicester has many firms involved in handling textile materials, both in production (particularly knitting) and making up into garments. Our team obtained information from a local knitting firm, William Baker Limited, the Polytechnic's own textile department and the textile research association, HATRA, and has developed this work with funding from the SERC.

Defects are common in textile production because of the complexity of the machinery and the high production speeds used. Generally a sample of fabric is inspected to assess quality and only higher quality material is given 100 per cent inspection, where the cost of making defective items is high. Martin Lefley is aiming to use the computer to carry out inspection via a standard image, such as that seen by a television camera, to detect and classify defects. This approach has the advantage over other methods of automatic inspection of being able to interpret an image in much the same way as a human being does. Since, ultimately, defects will be found visually by consumers, this method has a certain aesthetic appeal: it matches the means by which the consumer will judge the fabric.

Preliminary research with plain fabrics has yielded encouraging results and work is also being carried out on the inspection of patterned materials. It is hoped that by next year a general defect detector and classifier working at the limits of present technology will have been developed leading to the development of a production machine capable of the continual inspection of textile material.

In the next few years an important

aspect of the group's work is likely to be in the prototyping of future systems. Most of the work of the group, including that referred to above, is being brought together to ensure the capability of providing realistic simulations of the very advanced computer systems that the current government initiatives are aiming to produce. Because these systems will often be highly interactive and used by a wide range of people, most of whom will not be computer experts, the issues arising from the human factors will be crucial to their success.

A very clever medical aid system, for example, that a doctor cannot use is little more than a waste of money. The method that will be used to tackle the problem will be to arrange for potential users — doctors, for example — to use the simulations. The evaluation team, led by Dr Peter Innocent, will use a wide variety of qualitative and quantitative measures to assess usefulness. In this way the design of these systems can be based on hard evidence about the required characteristics rather than on the musings of computer experts, who often have a very special and atypical view of what makes a good computer system.

Ernest Edmonds

Ernest Edmonds is Director of the Human-Computer Interface Unit at Leicester Polytechnic.

## The British Library Library and Information Research Reports

The British Library has issued a series of conveniently sized (A5) paperback reports on those aspects of librarianship and information science that are of interest to a wide range of professionals and the public. LIR Reports pay particular attention to new technology designed to improve the ways in which libraries are run and information is retrieved, collected, catalogued and transmitted. General subjects include: supply and demand; LIR Report 1, ISBN 0 7123 3014 3, £7.00. Education: LIR Report 2, ISBN 0 7123 3015 0, £7.00. The on-line public library: LIR Report 3, ISBN 0 7123 3016 7, £7.00. The on-line public library: LIR Report 4, ISBN 0 7123 3017 4, £7.00. The on-line public library: LIR Report 5, ISBN 0 7123 3018 1, £7.00. The on-line public library: LIR Report 6, ISBN 0 7123 3019 8, £7.00. The on-line public library: LIR Report 7, ISBN 0 7123 3020 5, £7.00. The on-line public library: LIR Report 8, ISBN 0 7123 3021 2, £7.00. 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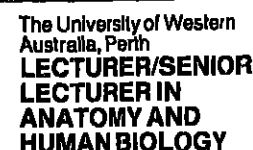




**University of  
Canterbury  
New Zealand**

**SENIOR LECTURER  
OR LECTURER IN  
ACCOUNTANCY**

Applications are invited  
for the above position in  
the Department of  
Accountancy.



Applications are invited for appointment for a period of five years in the full assistance with some prospect of renewal. The post will be available from early September 1983. Applicants will be expected to have a higher degree, or appropriate professional qualification, and to have teaching and research experience. Preference will be given to a neuroanatomist, with a strong research interest in the neurosciences and a medical qualification. The appointee would also be expected to teach in at least one other area within the Department.

La Trobe University,  
Melbourne  
LECTURER IN

Griffith University, Brisbane  
LECTURER -  
CENTRE FOR THE  
ADVANCEMENT OF  
LEARNING AND  
TEACHING

**ANTHROPOLOGY**  
Social Anthropology (with a major interest in the study of Mediterranean and/or Latin American societies).

**AUSTRALIAN SOCIAL HISTORY**

COLLEGE OF WALES  
STYTH  
OF GEOLOGY

approximate: Friday, 15 July 1981

**University of The  
West Indies  
Trinidad  
PROFESSOR OF  
AGRICULTURAL  
ECONOMICS**

Applications are invited from suitably qualified candidates for the post of Professor of Agricultural Economics in the Department of Agricultural Economics and Farm Management. Applicants should have interests in Quantitative Analysis and/or Agricultural Development. In

will be an advantage. Duties will involve some coursework teaching and participation in the research program personally (possibly with the help of research assistants) and through supervising students, and to provide leadership in the discipline of Agricultural Economics.

Salary Scale: TS\$91.78  
TS\$111.372. [1] tier  
TS\$3.8472).

and naming three (3) referees to Secretary U.W.I., St. Augustine, Trinidad, W.I. Applicant resident in the UK should also send one (1) copy to The Overseas Education Appointments Department, The British Council, 20/91 Tottenham Court Road, London, W1P 0BD quoting reference U92/83. Further details obtainable from either source. H

**University of The  
West Indies  
Trinidad**  
**PROFESSOR IN  
ACCOUNTING**  
Applications are invited from suitably qualified candidates for the post of Professor in Accounting in the Department of Man-

ment studies. D.W.I. Augustine, Trinidad, is the successful applicant. He will be expected to lecture in courses in Financial Accounting and Management Accounting and the B.Sc. Diploma, and M.Sc. levels, to assume leadership in the design of the course curriculum as well as to recommend appropriate material, and to conduct research in Management with specific reference to the Caribbean area.

- Salary Scale: TT\$91,781 to TT\$111,372. (\$1 at a time) - nu = TT\$3,84721.

- FSSU Unfurnished accommodation if available at 10% or furnished accommodation at 12.4% or housing allowance of 20% of pensionable salary. Up to five (5) for economy passages on non-appointment passages for normal Transmigration. Stud application giving qualifications and experience.

and naming three (3) referees to Secretary U.W.I. St. Augustine, Trinidad, W.I. Applicants resident in the UK should also send one (1) copy to the Overseas Education Appointments Department, The British Council, 90/91 Tottenham Court Road, London W19 6PB quoting reference U93/83. Further details obtainable from either source. R

**University of the  
West Indies  
Trinidad**  
**LECTURER/ASSISTANT LECTURER in  
HISTORY**  
Applications are invited from suitably qualified candidates for the post.

**Lecturer/Assistant Lecturer in History.**  
U.W.I. St. Augustine  
Trinidad, W.I. to teach  
History of Science and  
Technology or History of  
Economic Thought and  
History of Europe. In  
addition the appointee  
will be responsible for the  
supervision of postgraduate  
research and teaching  
the M.A. by coursework.  
**Salary Scale: Lecturer**  
72,000 - 84,000 TT\$72.00

TT53.476 to 1 Lecture  
Assistant - TT548.3  
TT548.480 - TT548.3  
(C) sterling  
TT53.8472).

FSU Unfurnish  
accommodation if available  
at 10% or furnish  
accommodation at 12%  
housing allowance of 20  
of pensionable salary.  
to five (5) full econo-  
passages on appointmen-  
and on normal termi-  
nation. Study and, Tra-  
Grant. Detailed appli-

tions giving qualifications and experience and naming three referees to the Secretary, U.W.I., St. Augustine, Trinidad. W. Applicants resident in the UK should also send a (1) copy to the Overseas Educational Appointments Department, The British Council, 90/91 Tottenham Court Road, London W. 1P. 0N quoting reference UO/85. Further details obtainable from either source.

### ACCOUNTANCY

Applications are invited for the above position in the Department of Accountancy.

Applications are sought primarily from persons capable of teaching courses and conducting research.

The salary for Senior Lecturers is on a scale between Rs. 10,000 and Rs. 15,000 per month.

Further particulars and conditions of Appointment may be obtained from the Association of Commonwealth Universities, 10, Abchurch Lane, London, E.C. 4.

Applications close with the Registrar, University of Canterbury, Private Bag, Christchurch, New Zealand, on 30 September 1983. H

**The University of  
Lancaster**  
Department of Linguistics  
and  
Modern English Language  
**TEMPORARY**

**LECTURESHIP**  
Applications are invited for a Temporary Lectureship in the Department of Linguistics and Modern English Language for a period of nine to twelve months from October 1983. Candidates should be able to contri-

due to the broad range of undergraduate teaching in the Department, with emphasis on Sociolinguistics and applications of Linguistics. They should, in addition, have adequate experience in open with teaching at MA level in those fields, and have appropriate research publications. Salary will be

Further particulars may be obtained (quoting reference L28118) from the Establishment Office, University House, Ballinacorney, Dublin 4, Ireland, naming three referees, should be sent on or before 8 July 1983, if

**University of  
Cambridge  
Jesus College**

**FELLOWSHIP AND  
COLLEGE  
LECTURESHIP IN  
HISTORY**

**Economic and Social History of England from 1450 to 1750 or European History since 1800.** The appointment will be for three years, with the possibility of reappointment for two years; preference may be given to candidates under thirty years of age. The Fellow will be expected to teach up to

twelve hours a week during Full Term. The salary for the post will be at a suitable point on the University Assistant Lecturer's scale, depending on age and experience; the scale is currently £6,800 year, rising by four annual increments to £8,510. A reduction will be made for anyone resident in Col-

Applications should be sent to the Master Secretary by 7 July 1981 and should be accompanied by a curriculum vitae and the names of two referees.

**University College  
Cardiff**  
David Owen Centre  
**PROJECT OFFICER**  
Project Officer required  
for writing micro-comp

puter program for the computer-assisted population training project (Poptra) in the David Owen Centre for Population Growth Studies at University College Cardiff. The appointment will be until June 30th 1984 in the first instance.

Applications ... (t)

copies), together with the names and addresses of two referees, should be forwarded to the Vice Principal (Administration & Registrar), University College, P. O. Box 7, Cardiff CF1 1XL, from whom further particulars will be available. Closing date 24th June 1985. Re 2620.

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## Universities continued

University of London  
TECHNICAL ASSISTANT

We are seeking a Technical Assistant for the University of London. The successful candidate will be responsible for the provision of technical support for the University of London. The post is full-time and requires a degree in a relevant subject.

Applicants should have a degree in a relevant subject and be able to provide technical support. The post is full-time and requires a degree in a relevant subject.

The appointment is for a three year period. Salary will be within the Administrative Grade 1A of the National Salary Structure for Universities. The successful candidate will be responsible for the provision of technical support for the University of London.

Further particulars and application forms are available from the Personnel Office, University of London, Senate House, Malet Street, London WC1E 7HU. Tel: 01-275 3111. Applications close 1 July 1983.

University of Liverpool  
LECTURER

Applications are invited for the post of Lecturer in the Department of Psychology. The successful candidate will be responsible for the provision of teaching and research in the field of psychology.

Candidates should have a degree in psychology and be able to provide teaching and research. The post is full-time and requires a degree in psychology.

The initial salary will be within the range £7,100-£11,500 per annum. The successful candidate will be responsible for the provision of teaching and research in the field of psychology.

Further particulars and application forms are available from the Personnel Office, University of Liverpool, Chester Road, Chester CH1 9AG. Tel: 01-275 3111. Applications close 1 July 1983.

University of Aberdeen  
DIRECTOR OF COMPUTING UNIT

Applications are invited for the post of Director of the Computing Unit. The successful candidate will be responsible for the provision of computing services to the University of Aberdeen.

Candidates should have a degree in computing and be able to provide computing services. The post is full-time and requires a degree in computing.

The salary will be within the range £11,500-£15,500 per annum. The successful candidate will be responsible for the provision of computing services to the University of Aberdeen.

Further particulars and application forms are available from the Personnel Office, University of Aberdeen, Aberdeen AB9 8QY. Tel: 01-275 3111. Applications close 1 July 1983.

University of Oxford  
LECTURESHIP

Applications are invited for the post of Lecturer in the Department of Psychology. The successful candidate will be responsible for the provision of teaching and research in the field of psychology.

Candidates should have a degree in psychology and be able to provide teaching and research. The post is full-time and requires a degree in psychology.

The salary will be within the range £7,100-£11,500 per annum. The successful candidate will be responsible for the provision of teaching and research in the field of psychology.

Further particulars and application forms are available from the Personnel Office, University of Oxford, Oxford OX1 2JD. Tel: 01-275 3111. Applications close 1 July 1983.

Heriot-Watt University  
TEMPORARY LECTURESHIP IN COMPARATIVE GOVERNMENT

Applications are invited for a temporary Lectureship in Comparative Government. The successful candidate will be responsible for the provision of teaching and research in the field of comparative government.

Candidates should have a degree in comparative government and be able to provide teaching and research. The post is temporary and requires a degree in comparative government.

The salary will be within the range £7,100-£11,500 per annum. The successful candidate will be responsible for the provision of teaching and research in the field of comparative government.

Further particulars and application forms are available from the Personnel Office, Heriot-Watt University, Edinburgh EH1 1HA. Tel: 01-275 3111. Applications close 1 July 1983.

The University of Sheffield  
CHAIR IN THE DEPARTMENT OF INFORMATION STUDIES

Applications are invited for the Chair in the Department of Information Studies. The successful candidate will be responsible for the provision of teaching and research in the field of information studies.

Candidates should have a degree in information studies and be able to provide teaching and research. The post is full-time and requires a degree in information studies.

The salary will be within the range £11,500-£15,500 per annum. The successful candidate will be responsible for the provision of teaching and research in the field of information studies.

Further particulars and application forms are available from the Personnel Office, University of Sheffield, Sheffield S10 2TN. Tel: 01-275 3111. Applications close 1 July 1983.

The University of Sheffield  
CHAIR OF ECONOMICS

Applications are invited for the Chair of Economics. The successful candidate will be responsible for the provision of teaching and research in the field of economics.

Candidates should have a degree in economics and be able to provide teaching and research. The post is full-time and requires a degree in economics.

The salary will be within the range £11,500-£15,500 per annum. The successful candidate will be responsible for the provision of teaching and research in the field of economics.

Further particulars and application forms are available from the Personnel Office, University of Sheffield, Sheffield S10 2TN. Tel: 01-275 3111. Applications close 1 July 1983.

University of Aberdeen  
CHAIR OF OPERATIONAL RESEARCH

Applications are invited for the Chair of Operational Research. The successful candidate will be responsible for the provision of teaching and research in the field of operational research.

Candidates should have a degree in operational research and be able to provide teaching and research. The post is full-time and requires a degree in operational research.

The salary will be within the range £11,500-£15,500 per annum. The successful candidate will be responsible for the provision of teaching and research in the field of operational research.

Further particulars and application forms are available from the Personnel Office, University of Aberdeen, Aberdeen AB9 8QY. Tel: 01-275 3111. Applications close 1 July 1983.

## Fellowships

University College Cardiff  
RESEARCH FELLOW

Applications are invited for a Research Fellowship. The successful candidate will be responsible for the provision of research in the field of psychology.

Candidates should have a degree in psychology and be able to provide research. The post is full-time and requires a degree in psychology.

The salary will be within the range £7,100-£11,500 per annum. The successful candidate will be responsible for the provision of research in the field of psychology.

Further particulars and application forms are available from the Personnel Office, University College Cardiff, Cardiff CF1 1TA. Tel: 01-275 3111. Applications close 1 July 1983.

The University of Sheffield  
CHAIR IN THE DEPARTMENT OF INFORMATION STUDIES

Applications are invited for the Chair in the Department of Information Studies. The successful candidate will be responsible for the provision of teaching and research in the field of information studies.

Candidates should have a degree in information studies and be able to provide teaching and research. The post is full-time and requires a degree in information studies.

The salary will be within the range £11,500-£15,500 per annum. The successful candidate will be responsible for the provision of teaching and research in the field of information studies.

Further particulars and application forms are available from the Personnel Office, University of Sheffield, Sheffield S10 2TN. Tel: 01-275 3111. Applications close 1 July 1983.

The University of Sheffield  
CHAIR OF ECONOMICS

Applications are invited for the Chair of Economics. The successful candidate will be responsible for the provision of teaching and research in the field of economics.

Candidates should have a degree in economics and be able to provide teaching and research. The post is full-time and requires a degree in economics.

The salary will be within the range £11,500-£15,500 per annum. The successful candidate will be responsible for the provision of teaching and research in the field of economics.

Further particulars and application forms are available from the Personnel Office, University of Sheffield, Sheffield S10 2TN. Tel: 01-275 3111. Applications close 1 July 1983.

University of Aberdeen  
CHAIR OF OPERATIONAL RESEARCH

Applications are invited for the Chair of Operational Research. The successful candidate will be responsible for the provision of teaching and research in the field of operational research.

Candidates should have a degree in operational research and be able to provide teaching and research. The post is full-time and requires a degree in operational research.

The salary will be within the range £11,500-£15,500 per annum. The successful candidate will be responsible for the provision of teaching and research in the field of operational research.

Further particulars and application forms are available from the Personnel Office, University of Aberdeen, Aberdeen AB9 8QY. Tel: 01-275 3111. Applications close 1 July 1983.

The University of Leeds  
RESEARCH FELLOW - BIOTECHNOLOGY

Applications are invited for a Research Fellowship in Biotechnology. The successful candidate will be responsible for the provision of research in the field of biotechnology.

Candidates should have a degree in biotechnology and be able to provide research. The post is full-time and requires a degree in biotechnology.

The salary will be within the range £7,100-£11,500 per annum. The successful candidate will be responsible for the provision of research in the field of biotechnology.

Further particulars and application forms are available from the Personnel Office, University of Leeds, Leeds LS2 9JT. Tel: 01-275 3111. Applications close 1 July 1983.

The University of Sheffield  
CHAIR IN THE DEPARTMENT OF INFORMATION STUDIES

Applications are invited for the Chair in the Department of Information Studies. The successful candidate will be responsible for the provision of teaching and research in the field of information studies.

Candidates should have a degree in information studies and be able to provide teaching and research. The post is full-time and requires a degree in information studies.

The salary will be within the range £11,500-£15,500 per annum. The successful candidate will be responsible for the provision of teaching and research in the field of information studies.

Further particulars and application forms are available from the Personnel Office, University of Sheffield, Sheffield S10 2TN. Tel: 01-275 3111. Applications close 1 July 1983.

The University of Sheffield  
CHAIR OF ECONOMICS

Applications are invited for the Chair of Economics. The successful candidate will be responsible for the provision of teaching and research in the field of economics.

Candidates should have a degree in economics and be able to provide teaching and research. The post is full-time and requires a degree in economics.

The salary will be within the range £11,500-£15,500 per annum. The successful candidate will be responsible for the provision of teaching and research in the field of economics.

Further particulars and application forms are available from the Personnel Office, University of Sheffield, Sheffield S10 2TN. Tel: 01-275 3111. Applications close 1 July 1983.

University of Aberdeen  
CHAIR OF OPERATIONAL RESEARCH

Applications are invited for the Chair of Operational Research. The successful candidate will be responsible for the provision of teaching and research in the field of operational research.

Candidates should have a degree in operational research and be able to provide teaching and research. The post is full-time and requires a degree in operational research.

The salary will be within the range £11,500-£15,500 per annum. The successful candidate will be responsible for the provision of teaching and research in the field of operational research.

Further particulars and application forms are available from the Personnel Office, University of Aberdeen, Aberdeen AB9 8QY. Tel: 01-275 3111. Applications close 1 July 1983.

## NEWCASTLE UPON TYNE POLYTECHNIC

Applications are invited for the following vacancies:

FACULTY OF PROFESSIONAL STUDIES  
SCHOOL OF ECONOMICS  
SENIOR LECTURER IN ECONOMICS

The School wishes to recruit an Economist with interests in Applied Microeconomics, Financial, Industrial Economics, to share in the teaching of its degree and sub-degree level courses. It is expected that the person appointed will wish to develop/extend an interest in research in some of these fields. This post is tenable from September 1983, or as soon as possible thereafter.

FACULTY OF COMMUNITY AND SOCIAL STUDIES  
SCHOOL OF OCCUPATIONAL STUDIES  
SENIOR LECTURER IN PERSONNEL MANAGEMENT

Required to undertake teaching with all stages of the IPM scheme of professional training, with particular reference to professional practice and industrial relations. Human resource management teaching is also undertaken with the BA Business Studies and the Diploma in Management Studies.

Applicants should be professionally qualified in personnel management, hold a relevant degree and preferably demonstrate appropriate experience.

SCHOOL OF BEHAVIOURAL SCIENCE  
TEMPORARY LECTURER II IN PSYCHOLOGY

Required for the above post which is tenable only from 1st October, 1983 to 30th June, 1984. Applicants should possess a good Honours Degree in Psychology and preferably a Higher Degree and/or research experience and have an interest in social psychology and sports psychology. The appointee will be required to teach social psychology on the BSc Honours Psychology Degree and to contribute to the teaching of psychology to the BA Sport Studies Degree.

PAISLEY COLLEGE  
Department of Mathematics and Computing  
SENIOR LECTURER/LECTURER IN COMPUTING

This new post has been established by the Scottish Education Department as part of the Information Technology initiative. The successful candidate will be expected to contribute to the existing Honours and Degree courses in Information Technology currently under development.

Applications are invited from well-qualified mathematicians with industrial and research experience to contribute to the development of the mathematical sciences. The areas to be further developed are those which are of practical use in industry, are computer-based and include modelling, simulation and digital techniques.

The successful applicant will be expected to develop courses in modern industrial applied mathematics at undergraduate and postgraduate levels and to maintain and develop associated collaboration with industry.

Applicants should be skilled in writing standard Pascal and preferably also have a working knowledge of C, Unix and some knowledge of Ada.

Salary Scales: SL 'A' £12,228 to £15,411; SL 'B' £8,313 to £11,502; RA 'A' £7,190 to £11,615 (1 post); RA 'B' £6,310 to £8,530 (2 posts).

Application forms and further particulars may be obtained from the Personnel Officer, Paisley College of Technology, High Street, Paisley PA1 2BE. Tel: 041-887 1241, Ext. 230.

Coventry (Lancaster) Polytechnic  
Principal Lecturer in Information Systems Engineering

There are several vacancies for permanent posts in the Faculty of Engineering. The successful candidate will be responsible for the provision of teaching and research in the field of information systems engineering.

Candidates should have a degree in information systems engineering and be able to provide teaching and research. The post is full-time and requires a degree in information systems engineering.

The salary will be within the range £11,500-£15,500 per annum. The successful candidate will be responsible for the provision of teaching and research in the field of information systems engineering.

Further particulars and application forms are available from the Personnel Office, Coventry (Lancaster) Polytechnic, Coventry CV1 3PL. Tel: 01-275 3111. Applications close 1 July 1983.

Teesside Polytechnic  
Department of Computer Science  
LECTURER II SENIOR LECTURER IN COMPUTER SCIENCE

There are several vacancies for permanent posts in the Department of Computer Science. The successful candidate will be responsible for the provision of teaching and research in the field of computer science.

Candidates should have a degree in computer science and be able to provide teaching and research. The post is full-time and requires a degree in computer science.

The salary will be within the range £11,500-£15,500 per annum. The successful candidate will be responsible for the provision of teaching and research in the field of computer science.

## Polytechnics continued

PLYMOUTH POLYTECHNIC  
Faculty of Social Science  
Department of Psychology  
HEAD OF DEPARTMENT

with possible election to a Professorship. Applicants with high academic qualifications and appropriate education and research experience are invited for this appointment. The ability to give academic and research leadership is essential.

Salary: Head of Department Grade VI £10,632-£18,327. Application forms to be returned by 31 July, 1983 can be obtained with further particulars from the Personnel Officer, Plymouth Polytechnic.

Salary Scale: £7,215-£11,688. Application forms and further details are available from the Personnel Officer (Dept. 1), Sheffield City Polytechnic, Fitzalan Square, Sheffield S1 2BB, or by planning (0742) 20811, Ext. 367. Completed forms should be returned by 30th June. Sheffield City Polytechnic is an Equal Opportunities Employer.

Teesside Polytechnic  
Department of Design  
HEAD OF DEPARTMENT OF DESIGN (Grade V)

Applications are invited from persons with appropriate qualifications. The Department has honours degree courses in Industrial Design and Interior Design, as well as a course leading to the Associateship of the Clothing and Footwear Institute. Developments in the field of Computer Aided Design are prominent in the present work of the Department.

Salary Scale: £10,300-£17,001. Further particulars and application forms are available from the Personnel Officer, Teesside Polytechnic, Borough Road, Middlesbrough, Cleveland TS1 2BA. Tel: (0662) 218121, Ext. 414.

Closing date for applications: 16th July, 1983.

HUDDERSFIELD POLYTECHNIC  
Department of Life Sciences  
Re-Advertisement  
PRINCIPAL LECTURER

Ref: ACA/4678. Salary £12,519-£13,938 (bar) £15,744. Applications are invited for the permanent post of Principal Lecturer in the Department of Life Sciences. The successful candidate is likely to possess or demonstrate the following:

1. wide experience of, and involvement in, human environmental issues; 2. substantial and currently active research interests in Human Ecology; 3. ability and preparedness to make an important academic and administrative contribution to the BSc(HONS) Human Ecology degree, and to take a leading role in its future development.

Further details and application forms are available from the Personnel Officer, The Polytechnic, Queensgate, Huddersfield HD1 3DT, Tel: (0484) 22288, Ext. 224 and should be returned by 30th June, 1983.

The Polytechnic of North London  
Department of History, Geography and Social Studies  
SENIOR LECTURER/LECTURER GRADE II IN ECONOMICS

The Polytechnic offers a major research programme in the Department of History, Geography and Social Studies. The successful candidate will be responsible for the provision of teaching and research in the field of economics.

Candidates should have a degree in economics and be able to provide teaching and research. The post is full-time and requires a degree in economics.

The salary will be within the range £11,500-£15,500 per annum. The successful candidate will be responsible for the provision of teaching and research in the field of economics.

Further particulars and application forms are available from the Personnel Office, The Polytechnic of North London, London N4 4JL. Tel: 01-275 3111. Applications close 1 July 1983.

Manchester Polytechnic  
John Dalton Faculty of Technology  
Principal Lecturer or Lecturer II in Manufacturing

The Department seeks to appoint a manufacturing engineer experienced in modern manufacturing methods with particular emphasis on computer aided manufacturing.

The person appointed will be required to undertake teaching up to an intermediate level and pursue research and development in industrial consultancy.

The possibility exists for appointment as either Principal Lecturer or Lecturer II grade.

The Principal Lecturer post will carry additional responsibility for academic research and consultancy. Applicants for the Principal Lecturer post must therefore have an excellent record in research or consultancy in industrial consultancy.

Applicants for the Lecturer II post should have a degree in manufacturing engineering and be able to provide teaching and research. The post is full-time and requires a degree in manufacturing engineering.

The salary will be within the range £11,500-£15,500 per annum. The successful candidate will be responsible for the provision of teaching and research in the field of manufacturing engineering.

Further particulars and application forms are available from the Personnel Office, Manchester Polytechnic, Manchester M15 6BH. Tel: 01-275 3111. Applications close 1 July 1983.

DUNDEE COLLEGE OF TECHNOLOGY  
Department of Electrical & Electronic Engineering  
LECTURESHP

Applicants should possess a good honours degree in electrical and/or electronic engineering together with appropriate industrial and/or research experience.

Salary scale: £8,313-£12,228 (bar)-£13,125, with initial placing depending upon approved previous experience. Financial assistance towards the cost of removal may be payable.

Further particulars and application forms may be obtained from the Personnel Officer, Dundee College of Technology, Bell Street, Dundee DD1 1HG, to whom completed application forms should be returned by 1st July, 1983.

SHEFFIELD CITY POLYTECHNIC  
LECTURER II IN MECHANICS OF MATERIALS  
DEPARTMENT OF MECHANICAL AND PRODUCTION ENGINEERING

The person appointed will join the small group of staff concerned mainly with teaching Mechanics (Strength) of Materials on the Degree, Diploma and Certificate courses and will be expected to contribute to the Department's research and development programmes.

Applicants should possess a degree or higher degree in Mechanical Engineering and have appropriate research or industrial experience.

Salary Scale: £7,215-£11,688. Application forms and further details are available from the Personnel Officer (Dept. 1), Sheffield City Polytechnic, Fitzalan Square, Sheffield S1 2BB, or by planning (0742) 20811, Ext. 367. Completed forms should be returned by 30th June. Sheffield City Polytechnic is an Equal Opportunities Employer.

The Polytechnic of Wolverhampton  
Department of Economics and Social Studies  
Lecturer II/Senior Lecturer in Health Visiting to teach on Health Visiting and related courses

Details and application forms are available from the Personnel Officer, The Polytechnic, Wolverhampton WV1 1SB or Tel: Wolverhampton (0902) 710654 (Answerphone).

Oxford Polytechnic  
Assistant in Physical Sciences

Selective optical materials for laser applications. The Department of Geology and Physical Sciences is seeking to appoint a Research Assistant to work for three years on the preparation and characterization of selective optical materials used to improve the thermal efficiency of laser systems.

Applicants should have a degree in physics and be able to provide research and development. The post is full-time and requires a degree in physics.

The salary will be within the range £7,100-£11,500 per annum. The successful candidate will be responsible for the provision of research and development in the field of physics.

Further particulars and application forms are available from the Personnel Officer, Oxford Polytechnic, Oxford OX1 2JD. Tel: 01-275 3111. Applications close 1 July 1983.

Oxford Polytechnic  
LECTURER II SENIOR LECTURER IN PHYSICAL SCIENCES

Applications are invited for the post of Lecturer in the Department of Physics. The successful candidate will be responsible for the provision of teaching and research in the field of physics.

Candidates should have a degree in physics and be able to provide teaching and research. The post is full-time and requires a degree in physics.

The salary will be within the range £11,500-£15,500 per annum. The successful candidate will be responsible for the provision of teaching and research in the field of physics.

Further particulars and application forms are available from the Personnel Office, Oxford Polytechnic, Oxford OX1 2JD. Tel: 01-275 3111. Applications close 1 July 1983.

Oxford Polytechnic  
TEMPORARY LECTURER II SENIOR LECTURER IN MATHEMATICS

Applications are invited for the post of Temporary Lecturer in the Department of Mathematics. The successful candidate will be responsible for the provision of teaching and research in the field of mathematics.

Candidates should have a degree in mathematics and be able to provide teaching and research. The post is temporary and requires a degree in mathematics.

The salary will be within the range £7,100-£11,500 per annum. The successful candidate will be responsible for the provision of teaching and research in the field of mathematics.

Further particulars and application forms are available from the Personnel Office, Oxford Polytechnic, Oxford OX1 2JD. Tel: 01-275 3111. Applications close 1 July 1983.

## Applications are invited for the post of Lecturer II in Law

Salary scale: £7,215-£11,688. Application forms and further details are available from the Personnel Office, Preston Polytechnic, Preston PR1 2TG. Tel: (0772) 862027. Closing date 27th June 1983.

## PRESTON POLYTECHNIC

Oxford Polytechnic  
Department of Management & Business  
LECTURER II SENIOR LECTURER IN MARKETING

Applications are invited for the post of Lecturer in the Department of Management & Business. The successful candidate will be responsible for the provision of teaching and research in the field of marketing.

Candidates should have a degree in marketing and be able to provide teaching and research. The post is full-time and requires a degree in marketing.

The salary will be within the range £11,500-£15,500 per annum. The successful candidate will be responsible for the provision of teaching and research in the field of marketing.

Further particulars and application forms are available from the Personnel Office, Oxford Polytechnic, Oxford OX1 2JD. Tel: 01-275 3111. Applications close 1 July 1983.

Brighton Polytechnic  
Department of Business  
LECTURER II SENIOR LECTURER IN MARKETING

Applications are invited for the post of Lecturer in the Department of Business. The successful candidate will be responsible for the provision of teaching and research in the field of marketing.

Candidates should have a degree in marketing and be able to provide teaching and research. The post is full-time and requires a degree in marketing.

The salary will be within the range £11,500-£15,500 per annum. The successful candidate will be responsible for the provision of teaching and research in the field of marketing.

Further particulars and application forms are available from the Personnel Office, Brighton Polytechnic, Brighton BN1 9QJ. Tel: 01-275 3111. Applications close 1 July 1983.

The Polytechnic of North London  
Department of History, Geography and Social Studies  
SENIOR LECTURER/LECTURER GRADE II IN ECONOMICS

The Polytechnic offers a major research programme in the Department of History, Geography and Social Studies. The successful candidate will be responsible for the provision of teaching and research in the field of economics.







# Don's diary

## Dunkerque

3am. I'm waiting for the jolt of the SNCF car to begin its journey: half a Triolam tablet is washing inside me but the loud English voices in the compartment stop me from even dozing. I have walked endlessly, it seems, over these last three days: shopping and filling time across London, the obeying the lines of instruction drawn invisibly for waiting or tramping passengers, in the luggage-space where French ferry masters compel us to dump our property, then at the customs halls and control desks preceded by kilometre-long corridors of acquiescent, almost silent bodies.

Further along the conveyor belt of inquisition, the controllers stand in couples viewing the line of beggars for entry; does one of them have to check on the other or are they like the Spanish police, detailed off in pairs so that there is always one who can read and one who can write? None of the passengers rebels: we are schooled in these minor passivities and subservience seemingly unaware of the cocoon of silk-spun steel which envelops our migration. Two hours more of waiting, without explanation or announcement, and the train jerks forward. Yes, one is allowed after all to travel abroad.

## Parc des Invalides

A slightly irregular mustering of daffodils here today, their gold heads lolling like dozy soldiers. At the nearby corners of this quarter of buildings of the French state, kept police stand erect and observant. Vans in the streets unload mysterious complements of guards, machine-rifles slung from the brown, fallow, and the

informal work-place on the Rue de les Cases, government-funded and housing a vast collection of books, journals and documents on labour and welfare. The director, a collector, Chambelland, its available director, presides over a mass of communist, anarchist and socialist broadsheets, with the rows of books arranged in the order in which they were acquired (and catalogued accordingly).

I discover now that "Michel" the anarchist correspondent of Victor Serge (my subject of research) in 1921, actually had the alias of Relenk, or Relenok, or Kneller, or more obscurely Le Terrassier. I must give his dates of birth and death and intervening career in my footnotes but to my chagrin it appears that Robrieux's fourth, biographical volume of his interior history of the French Communist Party is not yet published. Tantalizingly, Mlle Chambelland lets me know that she has just been correcting Robrieux's proofs: I had hoped vainly that the file on "Michel" would be available here for enquirers in some inner cabinet of confidences and it is not to be.

All I can do is consult the latest volume in Jean Maltrou's magnificent biographical dictionary of the French labour movement, No Relenk, Kneller or Michel le Terrassier here yet. What about A. Bernard, the French Communist Party Politbureau member referred to in a 1927 letter from Serge to Trotsky? Maltrou's latest volume, rumoured only from Ben to Ben. Another blank drawn was my journey really necessary?

## Bibliothèque Nationale

A concentrated, rushed day: this morning I buzzed up to Nanterre on the RER line to consult *Action Socialiste Révolutionnaire*, the Belgian Socialist weekly of the 1930s which is another locus in the Serge-Trotsky correspondence. I did manage to consult the Catholic-leftist periodical *Esprit* in which one of Trotsky's old lieutenants in Spain confesses that his politics in the epoch of the civil war may have been somewhat sectarian. But there is nothing in the catalogue from Belgium. The slot machines out-

side the library are good, with cake morsels and warm chocolate.

Now I register myself with the authorities at the Bibliothèque Nationale: double control here again, an interview in a booth outlining the purpose of my visit and the name of the journals I want, further form-filling across the hall before a smart clerk who copies my passport details, exchanges my *laissez-passer* for a *carte des lecteurs*, writes down my number in a ledger and issues a second *laissez-passer*. In the huge *salle des périodiques* another watcher takes my reader's card from me and provides a plastic desk token. The catalogue again has nothing from Belgium, and all the pre-war material is out at the larger library at Versailles.

## Grenoble

My hotel room has a soft reading light, a balcony overlooking the garden and square and two patterned rugs over a floor space smelling of scrubbed pine. There is no respite from the rain up in these Alpine parts and my chest feels heavy as I get accustomed to the thin air of the streets. An easy bus journey takes me out to Pierre Broué, director of the Institut Léon Trotsky here, who has a capacious archive drawn from police records and the obscurest journals of the Fourth International. A. Bernard readily flips out for me from his index files and Claude Colan of the Frossard faction from the 1920s.

Little or nothing still on the mysterious Michel and no material here on Belgium. But a good afternoon's talk on matters Serbian and Trotskyist, plus his gleanings from the hitherto-closed section of the Trotsky archive at Harrow. We agree on the identification of (as one scholar has claimed) Serge's own: I have brought the relevant documentation from Jean Robrieux's *Le Parti communiste et la révolution* in Paris which has been published in the copies of *Contre Le Courant* in Serge's Mexican file, with their marginal notes to indicate his own authorship. A wonderful afternoon's work and one for which I have waited for several years.

## Lyon

It has to be Brussels in one day's travelling from Grenoble. My plans for further sightseeing there are scotched through an indefinite and sudden bus strike, overtly because of attacks by passengers upon the staff but more deeply an expression of thwarted measures. Along the river bank in Lyon I find a second-hand bookshop with Jean Galter-Boissier's memoirs of the 1930s, several pages devoted to his experience as a publisher for Serge's *De Léline à Staline*.

## Bruxelles

The red-dabbed posters for workers' festivals give a false impression of the strength of the radical tradition here: nothing remains from the far left whose relics I am picking over in my scholarly habit. The *Bibliothèque Albert* leaves books out for its readers only for a short period and I lose my requested volumes after an excessive lunch break with John Palmer, *The Guardian's* Europe correspondent.

I return today and discover my haul to be, lastly indeed, a thesis on the Belgian Trotskyist groups of the 1930s, and a complete file of *Action Socialiste Révolutionnaire*. There is no hint though of the identity of the "J. Fabre" who writes an article on Spain referred to in a letter of 1936 from Trotsky to Victor Serge. Regrettably, I must index Comrade Fabre as a pseudonym belonging to an unknown. But what if he was related to "Michel"?

Peter Sedgwick

The author is a lecturer in the politics department at Leeds University.

Last month I lamented the obvious: the incredibly low level at which the election was fought. I pondered on whether the way the BBC handles politics was cause or effect: achieving their statutory balance by turning most discussion of issues into short slanging matches of statistical abuse between politicians.

Perhaps it would be more reasonable to take them separately and in more depth: certainly the big television set-piece interviews of the leaders were less idiotic and demeaning to reason than the radio scraps. And a month ago it was not yet fully clear how equally awful was the press coverage, not in the sense of political bias, which is the born loser's perpetual excuse (personally I am never surprised that the BBC is not socialist, and even have some doubts that I would like it if it was). But awful in the sense that even the quality press soon ran away from the issues into an obsessive punters' commentary on the opinion polls and the future result.

"So-called victories" because I begin to worry whether democracy can stand much more of such degradation. I don't mean that democratic institutions will collapse into fascism. I simply mean that they will soon lose any pretence of being used democratically. Politics will become narrowed to the struggle for office between office-seeking politicians. "Jobs go to those who want them." A Conservative professor once remarked.

Oh, the Labour party has wider ambitions. But those who control the local party machines seem very little concerned to recruit new members who might threaten their own control. The Conservative Party will at least defend traditional liberties, it is said; but not if they result in Labour local authorities using traditional powers to vary the local pattern—small places like Sheffield, London and Scotland are in for a rough time under our new president and her assistants. The words "prime minister" are now a quaint anachronism.

Well, at least the degrading election campaign is all over. But one wakes up the morning after the night before (if I may weep for my party as well as for my country, with its three to four million use to anyone and plainly embarrassing to most voters in jobs) and one hears on the BBC: "Michael Foot said that there will be widespread and united support for the Labour Party to rebuild the party."

And then, "We are not alone."

Leaders of the Labour Party of not

## Persuading the parties to go public



Bernard Crick

believing in their programme." For once I find it hard to keep my temper in control, so I remind myself that I've only had four hours sleep and that after a hard evening of knocking-up and driving to the polls innocent Scottish working-class voters: "Oh, the polls is rubbish. We're ginn t'win ye ken." "Here we might, we didn't."

However, Michael Foot's remark may be innocent, almost empty; but if I'm tired, depressive, ill tempered and desperately worried for the future of our country, I would say the need to "rebuild" the Labour Party comes very low on any rational scale of priorities compared to the needs for the party, whether old-build, new-build, falling-down or building-up, to face the reality of the unpopularity of its programme.

The Conservatives campaigned on Labour's programme. No amount of internal thinking or comradely debate can get around that. Foot's role, success or failure, will be judged by the party together. In fact he didn't—he could not prevent the Social Democratic secession.

Not that the old party noticed or cared. Labour never runs so fast with its head chopped off. "We are not alone" they say, "we are not alone" one heard that said. The party held

together, all right, but seemed to lose any sense of what the ordinary public, even its own traditional stubborn voters, wanted or would stand for.

All those marvellous issues in the comprehensive programme! What a victory for socialism! If, that is, most members of the Labour Party are happy for it to be something like a students' union, passing generous resolutions against the Bomb, against Europe, and against injustice everywhere and not to be a political party in the boring sense described by the text-books of my trade and organizations seriously seeking to form a government.

Perhaps my own position will be misunderstood. I am a socialist. I scorn the Social Democrats as having an affable fantasy that truth must lie plonk between two extremes. Mrs Thatcher's lack of feeling for the unemployed and her party's deindustrialization of Britain, its capture by the hard men who make money and not things, drives me back to my student socialism.

Apart from the Europe and the animal rights planks, I can support my party's programme almost wholeheartedly. And Mr Enoch Powell has expressed exactly my sentiments on the folly of us thinking that we need or could ever use a nuclear deterrent. But I am amazed that intelligent local activists can actually believe that such a programme constitutes tactical election manifesto rather than a long-term strategy for the decades and generations, even.

If the Labour Party is not to dwindle away into something like the Italian Socialist Party, it must recover some hard historical and sociological sense of possible time-scales. And meantime it must deal with people and possible short-term allies as they are, not as they should be in theory; and try to win ordinary people round to understand and support its policy slowly and patiently, step by step.

The great danger for our country is that both the main parties have become almost psychotically internalized. But if Labour's new leaders do address themselves to the public, might not the three English universities be able to do so? Will the party become a perpetual students' union or an alternative government?

Rhetoric, said great Aristotle, must enunciate simple principles, be based on empathy with the audience addressed, and find the forms appropriate to carry the argument through that audience. Modern rhetoricians talk mainly to each other.

all university income comes from our federal government. And not so long ago we were making plans on the basis that we would soon be facing the same fate as British academics. Since 1975 the previous Liberal (i.e. conservative) government had been whittling away at higher education funding in a number of areas. As we entered the 1980s the whittle turned into a steady chop. Decisions of the infamous "Reform Gang" together with various other federal government decisions to manipulate (and invariably reduce) the resources available to universities seemed to be leading us down the road to the adoption of full-scale Thatcherism by the mid 1980s.

All that had been said about the role of the University Grants Committee, in that it seemed to have turned into an arm of government rather than an independent advisory body, was equalled, at least until recently, of our own Tertiary Education Commission.

But things have now altered, albeit temporarily. Since March we have had a Labour government, and a government which is apparently prepared to do, if not to do, some quite positive things in education. Our first minister for education, Sir Kenneth Robinson, has said that far from cutting back on higher education, she believes there should be from 25,000 to 40,000 new tertiary enrolments in the next few years. And the new minister for science and technology is certainly a more dynamic supporter of university research than his predecessor.

But, as one opposition MP recently asked: "Will the dollars match the rhetoric?" The new Hawke government unwittingly inherited a \$39 billion budget deficit, and many of its broken promises, although not as broken, seem much further away than they did before the election.

So far there have been no further cuts in university funding. The previous government had threatened to reduce university allocations for salary budgets because anticipated salary increases had not occurred owing to the

general "wage freeze", but this has not happened. There is little point in looking forward to anything other than a few frills in the forthcoming 1983-84 budget, however.

And we also still have to contend with the delayed effects of the financial stringency imposed by the previous government. Universities are definitely feeling the pinch and they are concluding, like their British counterparts, that as the major part of their expenditure is devoted to staff salaries, it is in this area that they must seek to make economies.

Quite naturally these proposals are vigorously opposed by the academic staff. Only time will tell the eventual outcome of this mini-battle, but it is symptomatic of a process which is going on to a greater or lesser degree in every Australian university. Junior staff are being sacked and not replaced, previously tenured lecturers are now being offered fixed terms; full-time positions are being broken down into a number of (cheaper) part-time and casual jobs.

But these are problems within the current funding triennium, which extends to the end of 1984. All eyes are now on the Commonwealth Tertiary Education Commission, which must report to its new masters in May 1984 on its proposals for spending on tertiary education for the 1985-87 triennium.

The next few years will be interesting, but difficult. Changes are inevitable but it is yet uncertain whether these can be achieved in rational and sensible cooperation between staff and management or whether we shall be forced to the "barricades". Whatever the outcome, I look forward to sharing our experiences with *THES* readers through these columns in the future.

Les Wallis

The author is general secretary of the Federation of Australian University Staff Associations.

## LETTERS TO THE EDITOR

### Government's role in underwriting the salary bill of the universities

Sir, — Mr Geoffrey Caston takes me to task (*THES*, Letters June 10) for stating that the university salary bill is underwritten. I do not think that it is in dispute that the Government underwrites part of the salary bill for universities; the recent troubles have been about cutting back expanding salary bills. Now that inflation is below 5 per cent and provided universities contain their salary bills, negotiating increases on a norm tending to zero, there is no reason to suppose the Government will not underwrite the salary bill of those who remain after the recent pruning exercise.

If universities start expanding their payrolls by creating new appointments they will get into the situation where the Government will turn off the tap again. The principle of dual funding (for teaching and a research floor) muddles the waters completely, in that it is impossible to isolate that

element of the salary bill devoted to maintenance of undergraduate teaching (even Lord Rothschild found this impossible).

The point that I was trying to make, is that as university teachers' primary function is to teach an admitted quota of the nation's youth, that as Government in effect (via UGC) controls intake, and prescribes staffing ratios, and that as national salary scales are approved by the DES in consultation with the Treasury, the Government must pay the lecturers' salaries.

Whether it will continue to vote funds for an unspecified average amount of research time build into the national salary scales is another matter. Obviously, as there are some university lecturers in some departments who spend their time teaching a high number of hours, there are others in other departments who do research most of the time and have a low

### Arts research

Sir, — Sir Peter Swinnerton-Dyer's reported statement (*THES*, May 27) that arts research "comes for free" will raise many a hollow laugh, not to say some despair. It represents a serious yet common, misunderstanding and, if it is to become University Grants Committee policy, a very disturbing trend indeed. Almost all recent claims about the erosion of the country's research base have been concerned with the pure and applied physical sciences, or with heavy-level funding for the social sciences, and have rarely mentioned the arts.

Behind Sir Peter's statement seems to be the assumption that any arts man can do research provided he is put in front of a book from his local library. While this may be possible in part in three English universities, it is miserably inappropriate elsewhere. Although the largest arts research centre is absorbed by travel and subsistence, and overall totals are ludicrously low when compared even with small science projects, there seems to be little systematic understanding of needs in current planning beyond the provision of libraries and small amounts of "start-up" funds.

At present, my appointment as a research student in my own university, reprinting him for making a "repeat visit" to a local repository in which much of his sources are located) When this journal carried out a brief survey of work in one limited field even before the cuts the response was singularly depressing, revealing considerable institutional disparities in the support of basic research and little real official understanding of many of the most basic problems. There seemed to be an almost inevitable assumption that the individual academic's pocket, often on the grounds that it contributed to the scholar's own career advancement — more hollow laughter?

One is led to wonder how many commercial undertakings, whose efficiency we are frequently urged to emulate, would expect their staffs to finance research and development from their salaries. Would institutions and Sir Peter please think again?

Yours faithfully,  
J. R. LOWSON,  
Editor, Southern History,  
17a Brunswick Road, Gloucester.

### School boards

Sir, — Christopher Price's comments (*THES*, June 10) may have the admirable quality of knock-out politics but it is not so clearly obvious that a scheme of school boards in individual London boroughs would necessarily collapse under pressures no more evident than those which have faced elected districts when coping with the committees of counties whose geographical boundaries may appear to surround them.

Furthermore, as an example of devolved power of which Christopher Price is probably well aware, Cambridgeshire's education authority established village colleges before the provision appeared in the 1944 Act. But that was seen as evolution not revolution.

Yours faithfully,  
DAVID GILLINGHAM,  
7th Mueswa Way,  
Cambridge.

### Architects' pact

Sir, — The correspondence following my article "Architecture under stress" (*THES*, April 29) calls for some clarification. Mr Farrel's (*THES*, June 3) questions my use of "environmental" as between this area relating to building physics of heat, light and sound and the absent one of building production.

Mr James (*THES*, May 27) I think misunderstands the "Pact" — the tacit agreement that architects as "artists" would be allowed freedom in formal language particularly when this is radical. To exercise an analogous freedom they would have to ask "Whose functional programmes?" "Whose spatial structure?" and find answers through architectural skills. Contrary to Mr Healey's claim, an increasing number of clients are willing to employ architects who reject the Pact. Naturally such rejection carries some unemployment risks — practice therefore to be organized to eliminate

Mr Healey (*THES*, May 13) suggests that by "subversion" in architecture I perhaps recommend architects "to subvert the law" — but the forces of the Crown when designing law courts or

number of teaching hours.

The Government's view, I think, will be that it is not enough to leave it vague and trust to a swings and roundabouts averaging out of teaching hours within a university, to the extent that no one actually teaches the average hours that are quoted from time to time. My feeling is that the Government will move toward separation of teaching and research funds with the object of clear costing of both. If this comes about, I have no hesitation in reasserting that the university teacher as distinct from researcher will have his distinct underwritten by the Government. It will be remembered that the objective of the Prices and Incomes Board (PIB) award in December 1968 was to shift salary rewards to wages those substantially involved in teaching, and away from research.

Comments on Dr Hill's article were directed to pointing out that

functional and spatial skills but stopped short at better technology. In my reference to "handmade" technology, I hoped the irony would express my disquiet at the diminution of technical skills among architects.

Churches and palaces, Mr Healey claims, demonstrate the truth that architecture is the handmaid of power structures. That is not relevant to my argument: their dominance was displaced by new types generated by the dislocations of the late eighteenth century. As for Manhattan, it is so unequivocally demonstrates my case that rigour demanded that the thesis be simplistic corroboration and belong to contemporary consciousness of public architecture. Significantly Mr Healey's churches and palaces — along with vernacular housing — are the pre-industrial revolution types whose forms camouflage today's functional and spatial meanings. Significantly

are male and human concerns.

Yours faithfully,  
THOMAS A. MARKUS,  
Professor of Building Science, University of Strathclyde.

### Student loans

Sir, — In his article headed "Developing individually" (*THES*, June 3) Graham Hills predicts an objection from the National Union of Students to his proposal for a voucher scheme to replace the current system of student financial support. He is correct in his prediction of our having an objection, but wrong in his speculation as to its nature.

Our objection would not simply be premised on defending present arrangements; we have repeatedly criticized the current system, and would welcome changes to increase access and increase students' independence, but we do not feel that the changes proposed by Graham Hills will do that. There is no evidence to suggest that the mandatory awards system deters applications from working class students; the reasons for the relatively low participation rate from this group are far more complicated, and rooted in the biases existing in pre-college education, and the general popular perception of higher education as being the property of "them" rather than "us".

Building maintenance grants into the fees system is extremely dangerous for exactly the reasons hinted at by the author. Unless the fee element was strictly controlled at a national level, the grant element would become part of the "free market" aspect of the scheme, with universities and colleges trying to attract students on the basis of "more grant", necessitating concessions at the fees end in order to run the college at anything resembling a reasonable standard.

The NUS's arguments against any form of loans scheme are well rehearsed; unless a government was prepared to overhaul completely the system of taxation in this country, they would, in every case, mean a system of double taxation, be extremely hard to administer, be devastating in effect on unemployed graduates, and be an actual disincentive to working class students.

Graham Hills's proposals seem to amount to little less than a different means of privatizing the university system, and privatizing the student financial support system, with government aid, but, it would seem, little government control. No mention is made of public sector higher education and although we would agree with many of the criticisms made of the current university system, we cannot believe that any workable or equitable solutions are proposed here.

Yours sincerely,  
SARAH VEALE,  
Vice President, Welfare, National Union of Students.

### Moving Marbles

Sir, — Comments on the quest of Melina Mercouri to repatriate the Elgin Marbles (*THES*, June 10) have wrongly applied an analogy with partly relevant works of art. The problem is not fully comparable with the locations of a Renoir or a medieval codex although that is aesthetically parts of the argument are relevant.

The Elgin Marbles are by contrast directly associated with a physical context. They belong to a structure, which they are integral components, and thus to a particular landscape and environment. The same cannot be said of other "works of art" implicit in the article.

The British Museum appears to have resisted (rightly) any move to transfer the marbles to a Greek museum where they will remain equally out of context. Melina Mercouri should consider the opportunity of more progressive heritage management of the classical landscape and persuade her government that if the marbles are to be reclaimed, then so must the Parthenon. When that happens the British Museum will have more difficulty in resisting.

Yours faithfully,  
JOHN HUNTER,  
Undergraduate School of Studies in Archaeological Sciences, University of Bradford.

### Union View

## Script for a Tory nightmare

The Conservative Party manifesto did not give much away about plans for higher education. Two short paragraphs placed, ominously for students, under the general heading of The Family, allowing perhaps for the vague construction that the higher education of young people will now fall more heavily on the family budget. That would be consistent with previous government ideas, but it hardly makes for a higher education policy to take us to the end of the 1980s.

There is, of course, the possibility of a hidden manifesto. Something left by Oliver Letwin before he moved on, with a few explanatory paragraphs from Ferdinand Mount on the importance of the family in footing the bill for education. I doubt if this is likely. There is plenty already in the pipeline to satisfy even a Secretary of State like Sir Keith and give him scope for manoeuvre. Through both the University Grants Committee and the National Advisory Board he now has more direct control than any of his predecessors. So what sort of things might make up his programme?

Certainly the NAB process will now continue apace with perhaps a few more ideas added before the autumn. This could be the first opportunity to move on two-year degrees. By the end of the first session of the new Parliament the universities will have to be told their future beyond the plans set out by the UGC in 1981. Besides more restrictions in finance, the opportunity now presents itself for an adventure into privatization.

In student finance we are already promised a review of the grants system, with an examination of students loans making up part of the process.

mandatory grants, we will have to see if it seems certain that they will try to ignore the gap. Enter the family again. Perhaps.

## NUS

A great deal of interest must surely now fall on Government attitude to student numbers. The demand for strict controls gave way, in the face of the election, to the claim that the public sector would maintain the Robbins principles of access. The contradictions of this generous attitude to student numbers with all the other stated objects of the Government on controlling finance were as glaring as the policy of the Labour Party on Poles. They were not, unfortunately, subject to the same public scrutiny and are not likely to be.

If this seems like a pessimistic nightmare, you are right. This is the vision which passed before my eyes in the small hours of Friday morning as I sat glued to the television. Throughout the night I drifted into sleep, and the nightmares that went with it. Unfortunately it turned out to be true that both Christopher Price and Philip Whitehead had lost their seats leaving a yawning gap in the higher education lobby with no obvious successors. But there was worse to come.

In one nightmare Sir Keith appeared in a Hammer House of Horror rerun of Count Dracula, you know the kind. Count Joseph lies buried in his coffin with a stake through his heart... along come the innocent electorate and pull out the stake for firewood. Little knowing the effect of their action remains buried until his obedient followers, who have sacrificed their will-power for eternal life, respond to his powerful intellect — dig him up and carry his coffin off to give him new life and new victims. You know, I swear that coffin was carried by six vice chancellors.

Neil Stewart

The author is president of the National Union of Students.